Middle School Math with Pizzazz!

Basic Facts; Place Value and Numeration; Operations with Whole Numbers
MIDDLE SCHOOL MATH WITH PIZAZZ!
is a series of five books designed to provide practice with skills and concepts taught in today's middle school mathematics programs. The series uses many of the same puzzle formats as PRE-ALGEBRA WITH PIZAZZ! and ALGEBRA WITH PIZAZZ!, both published by Creative Publications.

We believe that mastery of math skills and concepts requires both good teaching and a great deal of practice. Our goal is to provide puzzle activities that make this practice more meaningful and effective. To this end, we have tried to build into these activities three characteristics:

1. KNOWLEDGE OF RESULTS. Various devices are used in the puzzles to tell students whether or not their answers are correct. Feedback occurs immediately after the student works each exercise. For example, if a particular answer is not in the code or scrambled answer list, the student knows it is incorrect. He or she can then try again or ask for help. Additional feedback and reinforcement occurs when the student finds a puzzle solution that is appropriate. This immediate knowledge of results benefits students and also teachers, who no longer have to spend time confirming correct answers.

2. A MOTIVATING GOAL FOR THE STUDENT. The puzzles are designed so that students will construct a joke or unscramble the answer to a riddle in the process of checking their answers. The humor operates as an incentive, because the students are not rewarded with the punch line until they complete the exercises. While students may decry these jokes as "dumb" and groan loudly, our experience has been that they enjoy the jokes and look forward to solving the puzzles. The humor has a positive effect on class morale. In addition to humor, the variety and novelty of procedures for solving the puzzles help capture student interest. By keeping scrambled answer lists short and procedures simple, we have tried to minimize the time spent on finding answers or doing other puzzle mechanics.

3. CAREFUL SELECTION OF TOPICS AND EXERCISES. The puzzles within each topic area are carefully sequenced so that each one builds on skills and concepts previously covered. The sequence of exercises within each puzzle is designed to guide students in incremental, step-by-step fashion toward mastery of the skill or concept involved. A primary goal is the development of problem-solving ability. In order to solve problems, students need not only rules and strategies but also a meaningful understanding of basic concepts. Some puzzles in this series are designed specifically to build concepts. Other puzzles, especially those for estimation, also help deepen students' understanding by encouraging them to look at numbers as quantities rather than just as symbols to be manipulated. For puzzles specifically keyed to problem solving, we have tried to write problems that are interesting and uncontrived. We have included extra information in some problems, and have also mixed problem types within sets, so that the problems cannot be solved mechanically.

In addition to these efforts to make the puzzles effective, we have tried to make them easy to use. The topic for each puzzle is given both at the bottom of the puzzle page and in the Table of Contents on pages iv and v. Each puzzle is keyed to a specific topic in recent editions of leading middle school textbooks. Each puzzle requires duplicating only one page, and many of them provide space for student work. Finally, because the puzzles are self-correcting, they can eliminate the task of correcting assignments.

We hope that both you and your students will enjoy using these materials.

Steve and Janis Marcy
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The selection of topics for *Middle School Math With Pizzazz!* reflects recent thinking about what is important in an updated middle school math program. Virtually every puzzle can be matched with a particular lesson in recent editions of popular textbooks. After students have received instruction in a topic and worked some sample exercises, you might assign a puzzle along with a selection of textbook exercises.

Students in the middle grades should begin to classify many mathematics problems and exercises into one of three categories:

1. **Mental Math.** Problems for which an exact answer can be obtained mentally.

2. **Estimation.** Problems for which an approximate answer, obtained mentally, is sufficient.

3. **Tools.** Problems requiring an exact answer that cannot be obtained mentally. Students will use paper and pencil and/or calculators.

Some of the puzzles in this series focus specifically on one of these categories. A few puzzles actually present problems in all three categories and ask the student to make the classification.

By the time they reach the middle grades, students should generally be permitted to use calculators for problems that require tools (Category 3). The most common argument against calculator use is that students will become overly dependent on them. This concern, though, appears to be based primarily on fear that students will rely on the calculator for problems in Categories 1 and 2, those that should be done mentally.

To solve problems in Category 3, calculators are wonderful tools for computing. Students may also need paper and pencil to make diagrams, write equations, record results, etc., so they will need both kinds of tools. On the other hand, students should not need calculators for problems in Categories 1 and 2, problems that call for mental math or estimation. Skills in these areas are essential not only in daily life but also for the intelligent use of the calculator itself. The puzzles in this series reflect these three categories and the distinction between them.

When students do use calculators, you may want to have them write down whatever numbers and operations they punch in and their answers. This makes it easier to identify the cause of any error and assists in class management. Even when students do mental math or estimation puzzles, have them write a complete list of answers and, where appropriate, the process used to get the answers. Encourage students to write each answer before locating it in the answer list. Students should complete all the exercises even if they discover the answer to the joke or riddle earlier.

One advantage of using a puzzle as an assignment is that you can easily make a transparency of the page and display the exercises without having to recopy them on the board. You can then point to parts of a problem as you discuss it. It is often helpful to cut the transparency apart so that you can display exercises on part of the screen and write solutions on the remaining area.

Other books by Steve and Janis Marcy published by Creative Publications

*Pre-Algebra With Pizzazz! in a Binder*
Covers most topics in a pre-algebra curriculum

*Algebra With Pizzazz! in a Binder*
Covers most topics in a first-year algebra curriculum
What Sound Do Two Porcupines Make When They Kiss?

This multiplication table contains exactly 54 correct answers. The others are incorrect. Shade in each box that contains a CORRECT answer. Be sure to use pencil so you can erase if necessary.

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<th>3</th>
<th>1</th>
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<td>18</td>
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Each row contains two correct and two incorrect statements. Circle the word above each correct statement. When you finish, read the circled words and you will get the message!

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<th>DID</th>
<th>SOMEONE</th>
<th>FINALLY</th>
<th>HAS</th>
</tr>
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<td>(4 × 4) − 2 = 14</td>
<td>(9 × 8) − 9 = 62</td>
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<tr>
<td>2</td>
<td>HIT</td>
<td>WROTE</td>
<td>BOOKS</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>(8 × 6) + 5 = 49</td>
<td>(7 × 5) + 6 = 41</td>
<td>(4 × 7) − 8 = 22</td>
<td>(9 × 3) − 3 = 24</td>
</tr>
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<td>3</td>
<td>BOOK</td>
<td>REPORT</td>
<td>ABOUT</td>
<td>THAT</td>
</tr>
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<td></td>
<td>(6 × 6) + 9 = 45</td>
<td>(3 × 6) + 5 = 21</td>
<td>(8 × 5) − 7 = 37</td>
<td>(2 × 9) − 4 = 14</td>
</tr>
<tr>
<td>4</td>
<td>EXPLAINS</td>
<td>HAS</td>
<td>HOW</td>
<td>WHY</td>
</tr>
<tr>
<td></td>
<td>(5 × 1) + 8 = 13</td>
<td>(7 × 8) + 6 = 61</td>
<td>(6 × 7) − 9 = 33</td>
<td>(8 × 9) − 3 = 74</td>
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<tr>
<td>5</td>
<td>SOME</td>
<td>PEOPLE</td>
<td>TO</td>
<td>FIX</td>
</tr>
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<td>(5 × 5) + 1 = 28</td>
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<td>(4 × 8) − 7 = 25</td>
<td>(9 × 7) − 4 = 59</td>
</tr>
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<td>BROKEN</td>
<td>CLOCKS</td>
<td>WHEN</td>
<td>AND</td>
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<td>(6 × 9) + 6 = 60</td>
<td>(5 × 9) − 8 = 39</td>
<td>(8 × 8) − 2 = 62</td>
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<td>OTHER</td>
<td>IT</td>
<td>IS</td>
<td>VERY</td>
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<td>(0 × 3) + 7 = 11</td>
<td>(9 × 4) + 9 = 45</td>
<td>(5 × 7) − 6 = 29</td>
<td>(4 × 6) − 4 = 26</td>
</tr>
<tr>
<td>8</td>
<td>ABOUT</td>
<td>ONE</td>
<td>GOOD</td>
<td>TIME</td>
</tr>
<tr>
<td></td>
<td>(2 × 5) + 3 = 13</td>
<td>(9 × 9) + 8 = 86</td>
<td>(7 × 6) − 7 = 37</td>
<td>(3 × 4) − 1 = 11</td>
</tr>
</tbody>
</table>
**What Do Retired Coin Dealers Like To Do?**

Find the answer to each exercise in the set of boxes under it. Write the letter of the exercise in the box containing the answer.

- **T** \((6 \times 5) + (2 \times 4)\)
- **S** \((8 \times 4) + (7 \times 7)\)
- **D** \((9 \times 8) - (3 \times 2)\)
- **U** \((9 \times 7) - (6 \times 6)\)
- **A** \((3 \times 7) + (4 \times 6)\)
- **T** \((4 \times 9) + (8 \times 7)\)
- **N** \((3 \times 8) - (4 \times 5)\)
- **A** \((8 \times 9) - (5 \times 3)\)
- **U** \((7 \times 9) + (2 \times 8)\)
- **J** \((8 \times 8) + (2 \times 5)\)
- **O** \((9 \times 6) - (7 \times 4)\)
- **N** \((4 \times 8) - (9 \times 3)\)
- **I** \((9 \times 5) + (6 \times 3)\)
- **S** \((2 \times 7) + (6 \times 0)\)
- **D** \((5 \times 8) - (8 \times 2)\)
- **R** \((9 \times 9) - (1 \times 1)\)

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**Topic 1-4: Multiplication Facts**

- **O** \((6 \times 8) + (5 \times 9)\)
- **R** \((5 \times 4) + (9 \times 3)\)
- **I** \((6 \times 9) - (8 \times 5)\)
- **S** \((9 \times 9) - (4 \times 7)\)
- **L** \((7 \times 6) + (4 \times 4)\)
- **K** \((4 \times 2) + (8 \times 6)\)
- **E** \((7 \times 5) - (3 \times 6)\)
- **L** \((8 \times 6) - (7 \times 3)\)
- **E** \((9 \times 4) + (7 \times 8)\)
- **V** \((6 \times 6) + (6 \times 8)\)
- **O** \((8 \times 7) - (5 \times 5)\)
- **M** \((7 \times 7) - (3 \times 5)\)
- **A** \((2 \times 6) + (7 \times 9)\)
- **T** \((9 \times 0) + (5 \times 6)\)
- **D** \((6 \times 7) - (9 \times 2)\)
- **D** \((6 \times 4) - (4 \times 6)\)
1. Where do Martians leave their spaceships?

2. Where do Cheerios® go every day at noon?

TO DECODE THE ANSWERS TO THESE QUESTIONS:
Find the answer to each exercise in the code. Each time the answer appears, write the letter of that exercise above it.

G  (3 × 4) + (2 × 5) + (6 × 2)  K  (9 × 7) + (8 × 8) + (3 × 5)
U  (8 × 3) + (5 × 9) + (4 × 4)  O  (6 × 3) + (7 × 4) + (5 × 8)
E  (9 × 8) + (2 × 7) + (6 × 5)  M  (9 × 4) + (8 × 6) + (3 × 3)
C  (3 × 9) + (7 × 7) + (4 × 6)  L  (6 × 6) + (8 × 9) + (7 × 3)
I  (9 × 6) + (8 × 4) + (5 × 7)  P  (4 × 8) + (7 × 9) + (9 × 5)
A  (3 × 7) + (7 × 6) + (9 × 9)  N  (7 × 8) + (5 × 5) + (6 × 9)
S  (8 × 7) + (5 × 4) + (6 × 8)  R  (3 × 6) + (8 × 5) + (7 × 7)

H  An auto mechanic bought 6 screwdrivers at $8 each. He also bought 4 wrenches at $9 each. What was the total cost?

In a 2-week period, the mechanic worked 8 hours a day for 7 days and 5 hours a day for 3 days. How many hours did he work altogether?
Jest the Facts:

**Why was Elmo’s Report Card All Wet?**

Find the answer to each exercise in the appropriate set of answers and notice the letter next to it. Write this letter in the box containing the number of the exercise.

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<td>48 ÷ 6</td>
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<td>27 ÷ 9</td>
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<td>4 ÷ 4</td>
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<td>7</td>
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</tr>
<tr>
<td>11</td>
<td>Ms. Shoe made 36 cookies and divided them equally among her 9 kids. How many cookies did each kid get?</td>
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**Answers 1–11:**

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<td>21</td>
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</tr>
<tr>
<td>22</td>
<td>A class has 13 boys and 15 girls. When divided into 4 teams of equal size, how many students are on each team?</td>
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**Answers 12–22:**

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<td>32</td>
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<tr>
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<td>In 42 days, Elmo will celebrate his birthday. He will be 12 years old. How many weeks until his birthday?</td>
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**Answers 23–33:**

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Why Did the Writer Move From the Third Floor to the Fifth?

Do each exercise below and find your answer in the Code Key. Notice the letter above it. Write this letter in the box at the bottom of the page containing the number of the exercise.

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1. \((8 ÷ 2) + (35 ÷ 7)\)  
2. \((20 ÷ 4) + (21 ÷ 3)\)  
3. \((42 ÷ 6) + (27 ÷ 9)\)  
4. \((36 ÷ 6) + (8 ÷ 8)\)  
5. \((45 ÷ 5) + (48 ÷ 8)\)  
6. \((10 ÷ 2) + (81 ÷ 9)\)  
7. \((63 ÷ 7) + (24 ÷ 3)\)  
8. \((16 ÷ 4) + (56 ÷ 8)\)  
9. \((30 ÷ 5) + (54 ÷ 9)\)  
10. \((25 ÷ 5) + (18 ÷ 6)\)  
11. \((36 ÷ 4) + (36 ÷ 9)\)  
12. \((9 ÷ 3) + (16 ÷ 8)\)  
13. \((49 ÷ 7) + (15 ÷ 5)\)  
14. \((48 ÷ 6) + (45 ÷ 9)\)  
15. \((8 ÷ 4) + (72 ÷ 8)\)  
16. \((7 ÷ 7) + (1 ÷ 1)\)  
17. \((64 ÷ 8) + (27 ÷ 3)\)  
18. \((54 ÷ 6) + (35 ÷ 5)\)  
19. \((36 ÷ 4) + (9 ÷ 1)\)  
20. \((30 ÷ 6) + (56 ÷ 7)\)  
21. \((42 ÷ 6) + (18 ÷ 2)\)  
22. \((24 ÷ 4) + (40 ÷ 5)\)  
23. \((15 ÷ 3) + (32 ÷ 8)\)  
24. \((21 ÷ 7) + (81 ÷ 9)\)  
25. \((28 ÷ 4) + (56 ÷ 7)\)  
26. \((42 ÷ 7) + (5 ÷ 5)\)  
27. \((0 ÷ 8) + (12 ÷ 4)\)  
28. \((72 ÷ 9) + (24 ÷ 6)\)  
29. \((12 ÷ 2) + (63 ÷ 9)\)  
30. \((36 ÷ 6) + (0 ÷ 4)\)  
31. \((0 ÷ 1) + (64 ÷ 8)\)  
32. \((63 ÷ 7) + (18 ÷ 3)\)  
33. \((32 ÷ 4) + (54 ÷ 9)\)  
34. \((40 ÷ 8) + (40 ÷ 5)\)  
35. \((49 ÷ 7) + (20 ÷ 5)\)  
36. \((24 ÷ 8) + (6 ÷ 6)\)
What Can You Say About Flat Bicycle Tires?

Find the answer to each exercise in the set of answers under the exercise. Cross out the letter above each answer. When you finish, the answer to the title question will remain!

Osgood is having a party. He plans to send 20 invitations. If invitations are sold in packs of 5, how many should he buy?

Osgood decides he needs 24 hot dogs and 6 bags of potato chips for his party. If hot dogs come in packs of 8, how many packs should he buy?

Osgood decides to serve soda in 12-ounce cans. He thinks he will need 36 cans. How many 6-packs of soda should he buy?
## Topic 1-c: Review: Basic Facts

**Middle School Math with Pizzazz! Book A**

### A - I

<table>
<thead>
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<th>Expression</th>
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<td>( \frac{4 + 6}{4 + 8} \times (18 + 6) )</td>
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<td>( \frac{3 + 6}{3 + 8} \times (16 + 6) )</td>
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<td>Y</td>
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<td>Z</td>
<td>( \frac{0 + 6}{0 + 8} \times (10 + 6) )</td>
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### Problem 42

Smedley has two rolls of crepe paper, one with 30 yards and one with 40 yards. If he cuts both rolls into 5-yard streamers, how many streamers will he have?
What Do You Call a Popular Perfume?

Solve each problem and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

1. Larry bought 7 medium pizzas from Pizza Heaven.
   a. How many pieces did he get?
   b. What was the total cost?
2. Sherry bought 1 small pizza and 1 medium pizza.
   a. How many pieces did she get?
   b. What was the total cost?
3. Perry bought 2 small and 3 large pizzas.
   a. How many pieces did he get?
   b. What was the total cost?
4. Mary bought 6 medium and 8 large pizzas.
   a. How many pieces did she get?
   b. What was the total cost?
5. Barry bought 9 small and 4 medium pizzas.
   a. How many pieces did he get?
   b. What was the total cost?
6. Kerry bought 6 small pizzas for a group of 8 people.
   a. How many pieces did she get?
   b. If divided equally, how many pieces will each person get?
7. Jerry bought 5 medium and 3 large pizzas for a group of 9 people.
   a. How many pieces did he get?
   b. If divided equally, how many pieces will each person get?
8. Terry bought 4 large pizzas for a group of 6 people.
   a. What was the total cost?
   b. If the cost is divided equally, how much will each person pay?
9. Gary bought 6 small and 6 medium pizzas for a group of 8 people.
   a. What was the total cost?
   b. If the cost is divided equally, how much will each person pay?

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<td>large</td>
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MIDDLE SCHOOL MATH WITH PIZAZZ! BOOK A
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Why Is It Dangerous to Do Math in the Jungle?

Mark each box containing a number that does not belong in that row. Then write the letters from these boxes on the lines at the right.

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What Happened to the Skunk Who Couldn't Swim?

For each exercise, shade in the factors of the given number. Then, in the Decoder Key, find the letter with the same pattern of shading. Write this letter in the box containing the number of the exercise.

1. factors of 28
   - 6
   - 18
   - 7
   - 4

2. factors of 18
   - 3
   - 6
   - 2
   - 9

3. factors of 15
   - 2
   - 5
   - 3
   - 7

4. factors of 42
   - 9
   - 5
   - 6
   - 7

5. factors of 49
   - 7
   - 6
   - 9
   - 5

6. factors of 24
   - 3
   - 8
   - 4
   - 6

7. factors of 56
   - 8
   - 7
   - 6
   - 9

8. factors of 30
   - 8
   - 4
   - 5
   - 6

9. factors of 12
   - 4
   - 3
   - 6
   - 2

10. factors of 81
    - 9
    - 8
    - 7
    - 6

11. factors of 72
    - 7
    - 5
    - 8
    - 9

12. factors of 63
    - 9
    - 5
    - 7
    - 8

13. factors of 64
    - 7
    - 9
    - 6
    - 8

14. factors of 45
    - 8
    - 9
    - 5
    - 6

15. factors of 32
    - 9
    - 8
    - 7
    - 4

16. factors of 36
    - 4
    - 7
    - 9
    - 6

17. factors of 54
    - 8
    - 7
    - 9
    - 6

18. factors of 9
    - 1
    - 3
    - 9
    - 2

Decoder Key

E
M
A
T
K
B
H
S
N
O

3
10
16
4
7
18
12
8
2
11
14
5
15
9
1
17
6
13
**When Is a Lady Not a Lady?**

Do each exercise and find your answer in the set of answers to the right. Write the letter of the answer in the box containing the number of the exercise.

### A blue whale could weigh more than 294,350 pounds.

Give the digit in each place named.

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<td>hundreds' place</td>
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</tr>
<tr>
<td>3</td>
<td>thousands' place</td>
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</tr>
<tr>
<td>4</td>
<td>ten thousands' place</td>
<td>T</td>
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</table>

### In one year, an elephant might eat 102,845 pounds of hay.

Give the digit in each place named.

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<tr>
<th>Exercise</th>
<th>Place Value</th>
<th>Letter</th>
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<td>ten thousands' place</td>
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<td>7</td>
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<td>M</td>
</tr>
<tr>
<td>8</td>
<td>hundred thousands' place</td>
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</table>

### The number of species of beetles is more than 216,750.

Give the digit in each place named.

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<th>Exercise</th>
<th>Place Value</th>
<th>Letter</th>
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### Write the number in standard form.

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<td>13</td>
<td>700,000 + 10,000 + 5,000 + 800 + 30 + 6</td>
<td>F</td>
</tr>
<tr>
<td>14</td>
<td>500,000 + 30,000 + 6,000 + 700 + 10 + 8</td>
<td>F</td>
</tr>
<tr>
<td>15</td>
<td>8,000 + 10,000 + 50 + 600 + 7 + 300,000</td>
<td>F</td>
</tr>
</tbody>
</table>

### Write the number in standard form.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Number Form</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>800,000 + 40,000 + 7,000 + 200 + 9</td>
<td>A</td>
</tr>
<tr>
<td>17</td>
<td>800,000 + 4,000 + 700 + 20 + 9</td>
<td>A</td>
</tr>
<tr>
<td>18</td>
<td>800,000 + 40,000 + 700 + 20 + 9</td>
<td>A</td>
</tr>
</tbody>
</table>

### Write the number in standard form.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Number Form</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>four hundred ninety-two thousand, six hundred</td>
<td>R</td>
</tr>
<tr>
<td>20</td>
<td>four hundred ninety thousand, two hundred sixty</td>
<td>R</td>
</tr>
<tr>
<td>21</td>
<td>four hundred nine thousand, two hundred six</td>
<td>R</td>
</tr>
<tr>
<td>22</td>
<td>four hundred ninety-two thousand, sixty</td>
<td>R</td>
</tr>
</tbody>
</table>
Why Are Unbrushed Teeth Like a Polaroid® Camera?

Do each exercise and find your answer in the set of answers to the right. Write the letter of the answer in the box containing the number of the exercise.

<table>
<thead>
<tr>
<th>The area of the United States is 3,618,465 square miles. Give the digit in each place named.</th>
<th>O 3 T 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 tens' place</td>
<td>2 ten thousands' place</td>
</tr>
<tr>
<td>3 thousands' place</td>
<td>4 millions' place</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The earth travels around the sun in 31,556,926 seconds. Give the digit in each place named.</th>
<th>R 3 E 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 hundreds' place</td>
<td>6 hundred thousands' place</td>
</tr>
<tr>
<td>7 millions' place</td>
<td>8 ten millions' place</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The speed of light is 670,614,120 miles per hour. Give the digit in each place named.</th>
<th>O 6 L 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 ones' place</td>
<td>10 thousands' place</td>
</tr>
<tr>
<td>11 ten millions' place</td>
<td>12 hundred millions' place</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Write the number in standard form.</th>
<th>I 12,034,050</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 one million, two hundred thirty-four thousand, five hundred</td>
<td></td>
</tr>
<tr>
<td>14 twelve million, thirty-four thousand, fifty</td>
<td></td>
</tr>
<tr>
<td>15 twelve million, three hundred four thousand, five</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Write the number in standard form.</th>
<th>E 908,007,060</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 ninety-eight million, seventy thousand, six hundred</td>
<td></td>
</tr>
<tr>
<td>17 ninety million, eight hundred seven thousand, six</td>
<td></td>
</tr>
<tr>
<td>18 nine hundred eight million, seven thousand, sixty</td>
<td></td>
</tr>
<tr>
<td>19 nine hundred eighty million, seven hundred six thousand</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Write the number in standard form.</th>
<th>S 505,055,050</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 fifty million, fifty thousand, five hundred five</td>
<td></td>
</tr>
<tr>
<td>21 five hundred fifty million, five thousand, fifty</td>
<td></td>
</tr>
<tr>
<td>22 five hundred five million, five hundred thousand, five</td>
<td></td>
</tr>
<tr>
<td>23 five hundred million, fifty-five thousand, five hundred</td>
<td></td>
</tr>
</tbody>
</table>
Why Did the Spy Get Caught When He Sneezed?

Do each exercise and find your answer in the answer columns. Write the letter of the answer in the box containing the number of the exercise.

I. Give the place value of each underlined digit.

<table>
<thead>
<tr>
<th></th>
<th>102,753,962,371</th>
<th>2</th>
<th>284,150,618,864</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>342,142,570,259</td>
<td>4</td>
<td>619,177,938,382</td>
</tr>
<tr>
<td>5</td>
<td>917,21,646,4\text{th}</td>
<td>6</td>
<td>889,899,605,065</td>
</tr>
<tr>
<td>7</td>
<td>205,016,439,628</td>
<td>8</td>
<td>7,847,235,390</td>
</tr>
<tr>
<td>9</td>
<td>4,760,921,077</td>
<td>10</td>
<td>56,888,759,416</td>
</tr>
<tr>
<td>11</td>
<td>3,541,413,174</td>
<td>12</td>
<td>396,536,637,077</td>
</tr>
</tbody>
</table>

13. The number of different ways that 14 books can be arranged on a shelf is 87,178,291,200.

Answers:

<table>
<thead>
<tr>
<th>O</th>
<th>ones</th>
<th>N</th>
<th>millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>tens</td>
<td>O</td>
<td>10 millions</td>
</tr>
<tr>
<td>E</td>
<td>hundreds</td>
<td>A</td>
<td>100 millions</td>
</tr>
<tr>
<td>D</td>
<td>thousands</td>
<td>E</td>
<td>billions</td>
</tr>
<tr>
<td>A</td>
<td>10 thousands</td>
<td>I</td>
<td>10 billions</td>
</tr>
<tr>
<td>E</td>
<td>100 thousands</td>
<td>S</td>
<td>100 billions</td>
</tr>
</tbody>
</table>

II. Write each number in standard form.

14. Five billion, seventy hundred twenty-four million, two hundred sixty-six thousand, eight hundred ten.

15. Ninety-three billion, four hundred fifty million, three hundred eighteen thousand, five hundred.

16. Four hundred thirty-six billion, eight hundred fifty-one million, six hundred eighty thousand.

17. Two hundred twenty-nine billion, four hundred six million.

18. Seven hundred thirty billion, five hundred ninety-six thousand.

19. Eight hundred two billion, three hundred thirty-four million, two hundred seventy-one.

Answers:

<table>
<thead>
<tr>
<th>T</th>
<th>436,850,680,100</th>
<th>B</th>
<th>5,722,466,810</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>436,851,680,000</td>
<td>N</td>
<td>93,450,318,500</td>
</tr>
<tr>
<td>L</td>
<td>229,460,100,000</td>
<td>S</td>
<td>730,000,596,000</td>
</tr>
<tr>
<td>H</td>
<td>5,724,266,810</td>
<td>C</td>
<td>229,406,000,000</td>
</tr>
<tr>
<td>D</td>
<td>802,334,000,271</td>
<td>R</td>
<td>93,405,358,000</td>
</tr>
</tbody>
</table>

| 5 | 1 | 14 | 3 | 11 | 9 | 17 | 2 | 19 | 4 | 7 | 12 | 16 | 13 | 6 | 15 | 10 | 18 | 8 |
Why Did the Farmer's Daughter Watch the Lazy Cows?

For each exercise, circle the letter of the correct choice. Write this letter in the box containing the number of the exercise.

II. Write the correct number by each question.

14. Which is the least number?
   15. Which is the greatest number?
   H 1,153
   G 1,099
   T 1,200

16. Which is the least number?
   17. Which is the greatest number?
   E 17,001
   I 8,470
   H 8,407

18. Which is the least number?
   19. Which is the greatest number?
   E 62,903
   M 62,300
   S 62,310

20. Which is the least number?
   21. Which is the greatest number?
   A 70,707
   T 77,007
   N 70,770

22. Which is the least number?
   23. Which is the greatest number?
   S 999,000
   O 1,000,000
   L 990,009

24. Which is the least number?
   25. Which is the greatest number?
   F 5,281,050
   A 5,263,078
   T 5,263,091
Why Did Mrs. Washington Go Into Young George's Bedroom Early In the Morning?

Do each exercise and find your answer in the answer column under it. Write the letter of the answer in the box containing the number of the exercise. If the answer has a ◯, shade in the box instead of writing a letter in it.

Round to the nearest ten.                                      Round to the nearest hundred.                                      Round to the nearest thousand.
1  362  6  8,109  *  11  863  16  65,283  *  21  3,294  26  90,909
2  757  7  22,451  *  12  451  17  90,559  *  22  8,675  27  372,861
3  425  8  71,094  *  13  1,922  18  54,036  *  23  9,580  28  608,522
4  1,984  9  50,269  *  14  7,370  19  54,063  *  24  28,064  29  174,280
5  3,668  10  81,898  *  15  4,505  20  236,645  *  25  49,307  30  99,900

Answers: A 400  S 50,260  L 4,600  M 55,000  U 50,000  S 174,000
         R 750  D 81,900  ● 900  H 236,600  M 8,000  A 608,000
         E 430  T 71,090  S 4,500  E 65,300  N 49,000  R 373,000
         S 360  S 22,460  B 400  N 90,500  S 10,000  L 362,000
         Y 1,990  E 50,270  O 1,900  ● 54,000  T 29,000  ● 91,000
         W 3,670  A 8,110  P 7,300  T 54,100  E 3,000  E 100,000
         H 760  R 81,890  T 500  R 236,700  ● 9,000  I 609,000
         ● 1,980  D 71,100  H 2,000  E 90,600  A 4,000  T 175,000
         D 3,660  N 22,450  ● 7,400  A 65,200  O 28,000  G 90,000
How Was Icky Snerd Driving His Parents Crazy?

Do each exercise and find your answer in the adjacent answer columns. Write the letter of the exercise in the box containing the number of the answer.

### Round to the nearest ten.

<table>
<thead>
<tr>
<th>Y</th>
<th>875</th>
<th>ANSWERS</th>
<th>T</th>
<th>5,280</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>2,663</td>
<td>26 78,510</td>
<td>O</td>
<td>9,643</td>
</tr>
<tr>
<td>A</td>
<td>8,094</td>
<td>4 2,670</td>
<td>A</td>
<td>4,957</td>
</tr>
<tr>
<td>S</td>
<td>8,199</td>
<td>10 880</td>
<td>E</td>
<td>57,092</td>
</tr>
<tr>
<td>O</td>
<td>44,087</td>
<td>15 78,500</td>
<td>S</td>
<td>57,029</td>
</tr>
<tr>
<td>I</td>
<td>78,502</td>
<td>12 44,080</td>
<td>I</td>
<td>380,677</td>
</tr>
<tr>
<td>E</td>
<td>173,466</td>
<td>24 8,090</td>
<td>H</td>
<td>641,009</td>
</tr>
</tbody>
</table>

### Round to the nearest hundred.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>ANSWERS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>5,280</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>9,643</td>
<td>21 9,700</td>
<td>26 380,700</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>4,957</td>
<td>11 642,000</td>
<td>4 5,000</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>57,092</td>
<td>14 4,900</td>
<td>16 57,000</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>57,029</td>
<td>22 57,100</td>
<td>1 641,000</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>380,677</td>
<td>20 5,300</td>
<td>3 5,200</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>641,009</td>
<td>28 380,600</td>
<td>12 9,600</td>
<td></td>
</tr>
</tbody>
</table>

### Round to the nearest thousand.

<table>
<thead>
<tr>
<th>E</th>
<th>7,300</th>
<th>ANSWERS</th>
<th>N</th>
<th>38,640</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4,508</td>
<td>9 5,000</td>
<td>A</td>
<td>93,700</td>
</tr>
<tr>
<td>R</td>
<td>16,499</td>
<td>8 53,000</td>
<td>V</td>
<td>166,450</td>
</tr>
<tr>
<td>W</td>
<td>52,066</td>
<td>21 250,000</td>
<td>W</td>
<td>572,119</td>
</tr>
<tr>
<td>S</td>
<td>80,738</td>
<td>28 16,000</td>
<td>S</td>
<td>160,888</td>
</tr>
<tr>
<td>H</td>
<td>249,170</td>
<td>14 249,000</td>
<td>H</td>
<td>2,744,500</td>
</tr>
<tr>
<td>B</td>
<td>249,710</td>
<td>25 4,000</td>
<td>P</td>
<td>6,196,370</td>
</tr>
</tbody>
</table>

### Round to the nearest ten thousand.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>ANSWERS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>38,640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>93,700</td>
<td>8 150,000</td>
<td>25 170,000</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>166,450</td>
<td>13 40,000</td>
<td>19 2,750,000</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>572,119</td>
<td>23 580,000</td>
<td>17 6,200,000</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>160,888</td>
<td>19 160,000</td>
<td>6 90,000</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>2,744,500</td>
<td>17 30,000</td>
<td>23 2,740,000</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>6,196,370</td>
<td>8 570,000</td>
<td>25 6,190,000</td>
<td></td>
</tr>
</tbody>
</table>

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
For each exercise, write the missing number in the blank. Then select the property illustrated. CIRCLE the letter in the appropriate column next to the sentence.

At the bottom of the page, find the box containing the number you wrote in the blank. Write the letter you circled in this box.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>commutative property</th>
<th>associative property</th>
<th>identity property</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 + 3 = [□] + 2</td>
<td>E</td>
<td>P</td>
<td>C</td>
</tr>
<tr>
<td>2</td>
<td>43 + [□] = 39 + 43</td>
<td>A</td>
<td>V</td>
<td>O</td>
</tr>
<tr>
<td>3</td>
<td>21 + 0 = [□]</td>
<td>S</td>
<td>A</td>
<td>T</td>
</tr>
<tr>
<td>4</td>
<td>[□] + 0 = 60</td>
<td>G</td>
<td>N</td>
<td>I</td>
</tr>
<tr>
<td>5</td>
<td>(4 + 5) + 6 = 4 + (5 + [□])</td>
<td>A</td>
<td>E</td>
<td>T</td>
</tr>
<tr>
<td>6</td>
<td>(74 + 29) + 83 = [□] + (29 + 83)</td>
<td>O</td>
<td>T</td>
<td>S</td>
</tr>
<tr>
<td>7</td>
<td>15 + ([□] + 6) = (15 + 33) + 6</td>
<td>R</td>
<td>H</td>
<td>E</td>
</tr>
<tr>
<td>8</td>
<td>149 + [□] = 149</td>
<td>L</td>
<td>R</td>
<td>I</td>
</tr>
<tr>
<td>9</td>
<td>70 + 80 = 80 + [□]</td>
<td>N</td>
<td>T</td>
<td>L</td>
</tr>
<tr>
<td>10</td>
<td>[□] + 586 = 586 + 211</td>
<td>Y</td>
<td>R</td>
<td>N</td>
</tr>
<tr>
<td>11</td>
<td>(5 + 19) + 14 = 5 + (□ + 14)</td>
<td>E</td>
<td>A</td>
<td>O</td>
</tr>
<tr>
<td>12</td>
<td>[□] + (64 + 55) = (37 + 64) + 55</td>
<td>A</td>
<td>I</td>
<td>U</td>
</tr>
<tr>
<td>13</td>
<td>8 + [□] = 43 + 8</td>
<td>M</td>
<td>W</td>
<td>B</td>
</tr>
<tr>
<td>14</td>
<td>99 + 0 = [□]</td>
<td>E</td>
<td>K</td>
<td>D</td>
</tr>
<tr>
<td>15</td>
<td>352 + 87 = [□] + 352</td>
<td>L</td>
<td>M</td>
<td>T</td>
</tr>
<tr>
<td>16</td>
<td>(93 + 45) + [□] = 93 + (45 + 68)</td>
<td>R</td>
<td>S</td>
<td>B</td>
</tr>
<tr>
<td>17</td>
<td>[□] + 0 = 51</td>
<td>F</td>
<td>N</td>
<td>R</td>
</tr>
<tr>
<td>18</td>
<td>75 + (225 + 30) = ([□] + 225) + 30</td>
<td>K</td>
<td>H</td>
<td>S</td>
</tr>
</tbody>
</table>
Do the exercises below and find your answers in the rectangle. Shade in each area containing a correct answer. You will discover what dentists hate!

1. $347 + 125$
2. $664 + 298$
3. $780 + 635$
4. $869 + 37$
5. $6,238 + 1,947$
6. $8,005 + 9,375$
7. $4,717 + 7,638$
8. $9,646 + 956$
9. $54,728 + 5,703$
10. $77,436 + 65,918$
11. $13,721 + 8,090$
12. $38,964 + 47,276$
13. $6.79 + 2.98$
14. $54.60 + 19.45$
15. $917.55 + 63.84$
16. $726.16 + 839.00$
17. $6,346 + 879$
18. $4,607 + 25,798$
19. $338.75 + 29.60$
20. $587 + 60,974$
21. $8,416 + 907$
22. $49,000 + 4,900$

MIDDLE SCHOOL MATH WITH PIZAZZ! BOOK A © Creative Publications

TOPIC 3-b: Addition: Two Addends
What Do You Get When You ...

1. Cross a rabbit with a lawn sprinkler?

14,232  54,820  94,700  1,502  46,840  6,289  39,880  94,700  54,820  12,105

2. Cross a kitten with a Xerox" machine?

54,820  95,300  50,373  775  39,880  12,105  51,273  50,373  54,820  263,267

3. Cross two turkeys with a coal production company?

296  88,472  1,944  1,502  94,700  1,734  14,771  88,472  94,700  60,511  6,289

TO DECODE THE ANSWERS TO THESE THREE QUESTIONS:
Do each exercise below and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

O  275
   468
   + 32
   Y  7,446
   980
   + 3,679
   B  1,078
   5,456
   + 8,237
   D  48,350
   9,666
   + 2,495

E  618
   337
   + 462
   H  3,954
   629
   + 9,061
   I  81,449
   193
   + 74
   T  42,671
   90,553
   + 77,147

S  265 + 839 + 5,185
C  43,706 + 49 + 6,618

Use the table at the right for the next three questions.

A What is the combined area of the two largest lakes?

____________ sq mi

P What is the combined area of the three smallest lakes?

____________ sq mi

R What is the combined area of all five lakes?

____________ sq mi

<table>
<thead>
<tr>
<th>Great Lakes</th>
<th>Area (square miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erie</td>
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Why Did Orgo Put a Box of Chalk in the Fire?

Do each exercise and find your answer at the bottom of the page. Write the exercise letter in the box above the answer. (The answer for each exercise is on the same side of the page as the exercise.)

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<td>8,144 - 78</td>
<td>19,652 - 9,812</td>
<td>Angel Falls in Venezuela, the highest waterfall in the world, is 3,281 feet high. Ribbon Falls in California, the highest in the United States, is 1,612 feet high. How much higher is Angel Falls?</td>
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<tr>
<td>4,516 - 772</td>
<td>13,694 - 87</td>
<td>Mt. Everest, the highest mountain in the world, is 29,002 feet high. Mt. McKinley in Alaska, the highest in North America, is 20,320 feet high. How much higher is Mt. Everest?</td>
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| 8,596 | 9,330 | 21,456 | 3,744 | 8,682 | 8,596 |
| 14 | 22,156 | 639 | 6,027 | 6,69 | 28,74 |
| 2,078 | 2,198 | 43 | 8,066 | 8,682 | 8,596 |
| 1,669 | 923 | 3,744 | 13,607 | 33,688 | 8,596 |
| 6,599 | 43 | 3,744 | 13,607 | 33,688 | 8,596 |
### Did You Hear About ...

Do each exercise and find your answer in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

#### Answers A–I:

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#### Answers J–R:

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<td>Q</td>
<td>Ms. Twinkle bought a car for $15,000. Five years later, she sold the car for $8,350. How much less was the selling price than the original purchase price?</td>
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<td>R</td>
<td>Leonardo bought one oil painting for $3,150 and another for $4,675. Later, he sold both paintings together for $10,000. How much profit did Leonardo make?</td>
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TOPIC 3-e: Subtraction: With Zeros
What Do You Get When You Phone a Bee?

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

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Matt ordered a Galaxy Burger and a Milky Way Shake.
Karen ordered a Moon Burger and a large Space Drink.

13. How many calories were in Matt's meal?
14. How many calories were in Karen's meal?
15. How many more calories were in Matt's meal than in Karen's meal?

Jennifer ordered a Star Burger, Astro Fries, and a small Space Drink.
Mike ordered a Galaxy Burger, Saturn Rings, and a Milky Way Shake.

16. How many calories were in Jennifer's meal?
17. How many calories were in Mike's meal?
18. How many more calories were in Mike's meal than in Jennifer's meal?

Galaxy Burgers
Calorie Chart

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<td>Moon Burger</td>
<td>365</td>
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<tr>
<td>Astro Fries</td>
<td>290</td>
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<tr>
<td>Saturn Rings</td>
<td>195</td>
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<tr>
<td>Milky Way Shake</td>
<td>430</td>
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<tr>
<td>Space Drink, large</td>
<td>140</td>
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<tr>
<td>Space Drink, small</td>
<td>85</td>
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"Our Burgers Are Meteor"
**Why Don’t Many Barbers Join the Army?**

Estimate each sum or difference. Circle the letter of the better choice. Write this letter in the box containing the number of the exercise.

1. $83 + 39$
   - D about 100
   - E about 120

2. $34 + 57$
   - I about 90
   - B about 120

3. $91 - 62$
   - L about 50
   - O about 30

4. $47 + 252$
   - G about 260
   - T about 300

5. $758 - 19$
   - U about 710
   - A about 740

6. $517 + 184$
   - Y about 700
   - N about 900

7. $925 - 306$
   - K about 400
   - E about 600

8. $1,892 - 721$
   - P about 1,500
   - H about 1,200

9. $288 + 4,109$
   - O about 4,400
   - V about 4,800

10. $336 + 580 + 127$
   - I about 1,000
   - D about 1,300

11. $8,195 + 7,606$
   - L about 13,000
   - E about 16,000

12. $9,130 - 5,799$
   - R about 3,000
   - W about 1,000

13. $45,307 - 1,853$
   - C about 40,000
   - T about 43,000

14. $29,974 - 6,838$
   - H about 23,000
   - R about 26,000

15. $3,710 + 8,926 + 5,235$
   - N about 18,000
   - L about 22,000

16. $7.84 + $9.15$
   - P about $14
   - F about $17

17. $18.58 - $6.63$
   - S about $10
   - J about $12

18. $1.98 + $22.09 + $4.67$
   - R about $29
   - D about $32

19. Valley Video owns 1,714 video tapes. Of these, 288 are rented out. About how many are not rented out?
   - B about 1,200
   - C about 1,400

20. Dinner costs $28.35. Tax and tip together add $6.83. About how much change should you get from a $50 bill?
   - S about $12
   - H about $15
What Kind of Birds Jump Out of Airplanes?

Solve each problem below and find your solution in the answer column. Write the letter of the answer in each box containing the number of the problem.

1. Kent weighs 139 pounds and his bicycle weighs 31 pounds. Jill weighs 106 pounds and her bicycle weighs 28 pounds. How much greater is the combined weight of Kent and his bicycle than the combined weight of Jill and her bicycle?

2. Janet and Andy bowled three games. Janet's scores were 119, 96, and 145. Andy's scores were 127, 74, and 88. How much greater was Janet's total score for the three games than Andy's total score?

3. In the three events of a weightlifting competition, Paul had lifts of 165, 290, and 259 pounds. Stan had lifts of 216, 344, and 243 pounds. How much greater was the combined total of Stan's three lifts than the total of Paul's three lifts?

4. In his first year on the basketball team, Tim scored 196 points. In his second year he scored 85 more points than the first year. In his third year he scored 33 fewer points than the second year. How many points did Tim score in the third year? (HINT: First find how many points he scored the second year.)

5. In his first year on the football team, Bill rushed with the ball 76 times for a total of 314 yards. In his second year, his rushing total was 68 fewer yards than the first year. In his third year, it was 127 yards more than the second year. How many yards did Bill rush in the third year?

6. Amy is training to run a marathon. During her five workouts last week, she ran distances of 18 miles, 15 miles, 12 miles, 17 miles, and 20 miles. How much greater is the combined distance of her five workouts than the marathon distance of 26 miles?

7. Sue has chosen some new ski equipment to buy. The skis cost $296, the poles cost $35, and the boots cost $180. However, one store is offering a package deal price of $375 for all three. How much money will Sue save by buying the package deal?
Why Is The Library Not Adding Any More Fairy Tales?

For each exercise, write the missing number in the blank. Then select the property illustrated. CIRCLE the letter in the appropriate column next to the sentence.

At the bottom of the page, find the box containing the number you wrote in the blank. Write the letter you circled in this box.

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<td>R</td>
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<td>16</td>
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<td>\times 1 = 161</td>
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<td>I</td>
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<td>R</td>
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<tr>
<td>17</td>
<td>(22 \times 1) \times 9 =</td>
<td></td>
<td>\times (1 \times 9)</td>
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<td>L</td>
<td>P</td>
<td>X</td>
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<tr>
<td>18</td>
<td>75 + (6 \times 0) =</td>
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<td>+ 0</td>
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<td>R</td>
<td>L</td>
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</table>

0  77  44  5  40  45  59  7  1  43  161  75  50  96  22  20  87  4
What is the Title of This Picture?

TO DECODE THE TITLE OF THIS PICTURE: These equations illustrate the **distributive property**. For each equation, fill in the missing number. Then find your answer in the coded title. Each time the answer appears, write the letter of the exercise above it.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Equation</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>$3 \times (6 + 7) = (3 \times 6) + (3 \times _)$</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>$5 \times (4 + 9) = (5 \times 4) + (5 \times _)$</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>$8 \times (11 + 2) = (8 \times _ ) + (8 \times 2)$</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>$6 \times (8 + 5) = (6 \times 8) + (_ \times 5)$</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>$25 \times (30 + 40) = (_ \times 30) + (25 \times 40)$</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>$70 \times (9 + _ ) = (70 \times 9) + (70 \times 12)$</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>$_ \times (61 + 49) = (3 \times 61) + (3 \times 49)$</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>$(4 \times 6) + (4 \times 8) = _ \times (6 + 8)$</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>$(20 \times 3) + (20 \times 17) = _ \times (3 + 17)$</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>$(9 \times 55) + (9 \times 29) = 9 \times (55 + _ )$</td>
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</tr>
<tr>
<td>A</td>
<td>$(87 \times 38) + (87 \times _ ) = 87 \times (38 + 74)$</td>
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<tr>
<td>X</td>
<td>$(31 \times 99) + (_ \times 56) = 31 \times (99 + 56)$</td>
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</tr>
<tr>
<td>O</td>
<td>$(_ \times 80) + (5 \times 50) = 5 \times (80 + 50)$</td>
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<tr>
<td>P</td>
<td>$19 \times (33 + 6) = (19 \times _ ) + (19 \times 6)$</td>
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<tr>
<td>Z</td>
<td>$(325 \times 7) + (325 \times _ ) = 325(7 + 8)$</td>
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**CODED TITLE:**

6 31 33 7 5 20 11 5 12 71 11 12 14 74

33 11 8 8 74 35 4 74 25 29 5 9 3
Why Did Ms. Snorg Throw Vegetables in the Air?

Follow the directions given for each section. Write the letter of each exercise in the box containing its answer.

I. Use mental math to find the product. Under each exercise, show the order in which you multiplied. The first exercise is done as an example.

- **S** 2 \times 13 \times 5  \[ (2 \times 5) \times 13 = 130 \]
- **A** 5 \times 66 \times 20
- **S** 21 \times 5 \times 4
- **M** 2 \times 688 \times 5

\[ \begin{array}{llllllllll}
420 & 960 & 790 & 990 & 4,700 & 280 & 130 & 2,700 & 6,880 & 6,600 & 2,400 & 9,400 & 440 & 430
\end{array} \]

II. Use mental math to find the product. Under each exercise, show how the distributive property can be used to multiply mentally. The first exercise is done as an example.

- **O** 3 \times 43  \[ (3 \times 40) + (3 \times 3) = 129 \]
- **D** 7 \times 23
- **S** 8 \times 47
- **D** 9 \times 36

\[ \begin{array}{llllllllllllllll}
\end{array} \]
# What Do You Call a Car Selling at Half Price?

Multiply mentally, write your answer, and then mark the answer columns. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

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<td>A</td>
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<td>3 × 30</td>
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<td></td>
<td>800 × 500</td>
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<td></td>
<td>60 × 2,000</td>
<td>E</td>
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<td>300 × 410</td>
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<td>3,000 × 100</td>
<td>W</td>
<td>1,000</td>
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<tr>
<td></td>
<td>9,000 × 102</td>
<td>C</td>
<td>18,000</td>
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**Answers:**

- **B:** 700
- **C:** 3600
- **D:** 28,000
- **E:** 9,000
- **F:** 18,000
- **G:** 3600
- **H:** 3,600
- **I:** 360
- **J:** 240
- **K:** 240,000
- **L:** 240,000
- **M:** 3,100
- **N:** 3,100
- **O:** 90
- **P:** 4,000
- **Q:** 12,000
- **R:** 12,000
Why Do They Call the New Hair Dryer "Volcano"?

Estimate these products. Round each factor to its greatest place, then multiply the rounded factors. Find your estimate in the lists directly under the exercise. Write the letter of the answer in the box containing the number of the exercise. If the answer has a ●, shade in the box instead of writing a letter in it.

1. 32 × 8
2. 5 × 89
3. 73 × 18
4. 57 × 41
5. 9 × 665

6. A bus can carry 48 passengers. About how many people can ride on 7 buses?

Estimates:

| 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| R  | I  | 2,400 |
| O  | P  | 500 |
| ●  | N  | 4,500 |
| G  | O  | 6,300 |
| U  | T  | 63,000 |

7. 71 × 48
8. 87 × 22
9. 45 × 59
10. 294 × 63
11. 17 × 758

12. A theater has 84 rows with 39 seats in each row. About how many seats are in the theater?

Estimates:

| 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| R  | I  | 3,500 |
| O  | P  | 16,000 |
| ●  | N  | 18,000 |
| G  | O  | 30,000 |
| U  | T  | 35,000 |

13. 406 × 892
14. 710 × 365
15. 9,285 × 34
16. 53 × 7,719
17. 6 × 6,180

18. An ABC machine weighs 520 kg and costs $4,250. About how much would a shipment of 28 ABC machines weigh?

Estimates:

| 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| R  | 1,500 kg | R  | 36,000 |
| O  | 2,800 | Y  | 270,000 |
| ●  | 4,000 | T  | 280,000 |
| G  | 15,000 kg | O  | 360,000 |
| U  | 27,000 | ●  | 400,000 |

19. 84 × 751
20. 396 × 469
21. 97 × 903
22. 7,840 × 72
23. 3 × 292,650

24. An XYZ machine weighs 81 kg and costs $679. About how much would 310 XYZ machines cost?

Estimates:

| 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S  | 640 | ●  | 200,000 |
| R  | $21,000 | T  | $210,000 |
| T  | $56,000 | F  | 560,000 |
| B  | 64,000 | L  | 900,000 |
| W  | 90,000 | S  | 2,000,000 |
Mysteries of Love

Do each exercise below and find your answer in the code above that set of exercises. Each time the answer appears, write the letter of the exercise above it. You'll love it!

What did the boy candle say to the girl candle?

246  450  470  432  432  855  192  296  282  448  288

288  162  945  316  945  288  685  462  448  450  945

?  

U  27  

G  56  

A  94

x 6

x 8

x 5

I  66  

S  82  

L  48

x 7  

x 3

x 9

E  37  

H  75  

W  96

x 8

x 6

x 2

T (27 × 5) + (90 × 9)

N (87 × 7) + (19 × 4)

There are 12 inches in a foot and 3 feet in a yard. How many inches are in 8 yards?

What did the boy rabbit say to the girl rabbit?

344  94  630  273  94  752  86  450  657  128  128  94  882

657  290  290  475  408  94  128  137  525  120

?  

Y  39  

F  68

x 7

x 6

A  73

x 9

E  40  

U  94

x 3

x 8

L  58

x 9

D  86  

M  75

x 4

x 7

O  47

x 2

T (26 × 9) + (81 × 8)

C (54 × 4) + (39 × 6)

R There are 16 ounces in a pint, 2 pints in a quart, and 4 quarts in a gallon. How many ounces are in a gallon?
Moving Words

Do each exercise in the top block and find your answer in the bottom block. Transfer the word from the top box to the corresponding bottom box. Keep working and you will get some helpful information.

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<th>(49 x 6) - (37 x 5)</th>
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<td>2</td>
<td>8 x 5 x 9</td>
<td>7 x 9 x 8</td>
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<tr>
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<td>(94 x 3) + (28 x 5)</td>
<td>(7 x 80) + (4 x 47)</td>
</tr>
<tr>
<td>4</td>
<td>NEVER</td>
<td>AND</td>
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<td>BECAUSE</td>
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<td>(100 - 92) x (6 x 8)</td>
<td>(49 x 6) - (37 x 5)</td>
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<td>CAN</td>
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<td>4 x 4 x 4 x 4</td>
<td>(8 x 93) + (27 x 6)</td>
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<tr>
<td>11</td>
<td>WILL</td>
<td>MUD</td>
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<td>(500 - 444) x (50 - 44)</td>
<td>(1 x 250) - (0 x 250)</td>
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What is the Title of This Picture?

Do each exercise below and find your answer in the coded title. Each time the answer appears, write the letter of the exercise above it.

**CODED TITLE:**

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<th>26,046</th>
<th>4,554</th>
<th>5,463</th>
<th>26,046</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,110</td>
<td>6,672</td>
<td>31,752</td>
<td>21,888</td>
<td>4,554</td>
<td>5,463</td>
<td>980</td>
<td>1,152</td>
<td>2,950</td>
<td>741</td>
<td>25,905</td>
<td>1,110</td>
</tr>
</tbody>
</table>

**U** 247  
× 3

**G** 196  
× 5

**L** 834  
× 8

**I** 759  
× 6

**E** 472  
× 4

**N** 607  
× 9

**O** 5,376  
× 7

**M** 8,635  
× 3

**Y** 3,648  
× 6

**S** 2,894  
× 9

**F** 6,079  
× 8

**A** 7,938  
× 4

If a computer printer can print 590 lines per minute, how many lines can the printer print in 5 minutes?

The bell in a college tower rings 156 times every day. How many times does the bell ring in a week?

Pat can type at an average speed of 185 words in 5 minutes. At this rate, how many words can Pat type in half an hour?
What Kind of Car Makes the Line In the Middle of the Road Disappear?

Solve each problem and find your answer at the bottom of the page. Cross out the letter above each correct answer. When you finish, the answer to the title question will remain—something you "auto" know!

1. Lincoln Middle School bought one Pro 35-A camera and three Instazoom cameras from Click Photo Supply. What was the total cost of this equipment?

2. Tim bought a Pro 35-A camera, a flash attachment, and a 28 mm lens. Joe bought an Instazoom camera and a tripod.
   A. How much did Tim’s equipment cost?
   B. How much did Joe’s equipment cost?
   C. How much greater was the cost of Tim’s equipment than Joe’s equipment?

3. Film is sold to Click Photo Supply with 6 rolls in a pack. There are 24 packs in a case. How many rolls of film are in 5 cases?

4. Jessica shot 7 rolls of film with 24 pictures on each roll and 2 rolls with 36 pictures on each roll. How many pictures did Jessica take altogether?

5. Jill shot 9 rolls of film with 36 pictures on each roll. Of these, 157 pictures were taken indoors. How many pictures were taken outdoors?

6. Mark is sports photographer for the school yearbook. During the year, he took 277 pictures at football games, 382 pictures at basketball games, and 468 pictures at other sports events. Of these, 58 were actually printed in the yearbook.
   A. How many sports pictures did Mark take altogether?
   B. How many of Mark’s pictures were not printed in the yearbook?

7. Bill’s photo album has 39 pages with 8 pictures on each page and 25 pages with 4 pictures on each page. How many pictures are in Bill’s album?

8. Mary’s photo album has 18 pages with 6 pictures on each page, 34 pages with 4 pictures on each page, and 10 pages with 1 picture on each page. How many pictures are in Mary’s album?

9. Tom has a photo album with 80 pages. There are 48 pages with 5 pictures on each page. All the other pages have 3 pictures on each page. How many pictures are in Tom’s album?

<table>
<thead>
<tr>
<th>PACAS</th>
<th>SREOAN</th>
<th>DCON</th>
<th>ENTART</th>
</tr>
</thead>
<tbody>
<tr>
<td>$163</td>
<td>167</td>
<td>$832</td>
<td>$887</td>
</tr>
<tr>
<td>380</td>
<td>240</td>
<td>412</td>
<td>197</td>
</tr>
<tr>
<td>$489</td>
<td>1,069</td>
<td>1,047</td>
<td>680</td>
</tr>
<tr>
<td>720</td>
<td>254</td>
<td>$652</td>
<td>$293</td>
</tr>
<tr>
<td>1,127</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOPIC 4-g: Problem Solving: Mixed Applications
1. Prizewinning dog:

36,028  35,178  12,336  44,716  15,720  3,564  11,820  59,512

2. Mudpie:

47,800  3,564  11,820  9,360  35,178  4,808  3,564  44,574  47,800

3. Pick for mountain climbers:

4,808  22,920  25,476  3,607  44,613  3,624  3,564  77,517

TO DECODE THESE THREE DAFFYNITIONS:

Do each exercise below and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

T  1,872  \times  5
F  7,439  \times  8
O  3,084  \times  4
B  4,957  \times  9

H  5,863  \times  6
I  8,492  \times  3
W  6,388  \times  7
E  9,560  \times  5

X  8,613  \times  9
K  7,429  \times  6
L  2,865  \times  8
S  9,007  \times  4

M  (7 \times 745) - (3 \times 536)
R  A rock band made a concert tour of 13 cities. They traveled an average of 1,970 miles per week for 6 weeks. How far did they travel altogether?

answer: ___________ miles

A  (478 \times 9) - (2 \times 369)
C  Tickets to a play cost $8 for adults and $5 for children. If 496 adult tickets and 168 children's tickets were sold, how much was spent on tickets altogether?

answer: $__________
Did You Hear About ...

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>238,190 SOME</td>
<td>5,668</td>
<td>9,073</td>
<td>7,485</td>
<td>6,918</td>
<td>47,638</td>
<td>85,006</td>
<td>37,896</td>
<td>54,273</td>
<td>93,847</td>
<td>26,930</td>
<td>48,657</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do each exercise and find your answer in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

### Answers A–H:

- **A**: 2749 x 8
- **B**: 5668 x 6
- **C**: 9073 x 4
- **D**: 7485 x 7
- **E**: 6918 x 9
- **F**: 47638
- **G**: 85006 x 8
- **H**: 37896 x 3
- **I**: 54273 x 9
- **J**: 93847 x 6
- **K**: 26930 x 7
- **L**: 48657

### Answers I–O:

- **I**: 8386
- **J**: 488457
- **K**: 582082
- **L**: 77450
- **M**: 194628
- **N**: 25910
- **O**: 8696
- **P**: 563082
- **Q**: 79150
- **R**: 449457
- **S**: 28810
- **T**: 184928
- **U**: 188510

---

**Sound travels at a speed of about 1,087 feet per second when the temperature is 32°F. At this speed, how far does sound travel in 8 seconds?**

**Answer: 8,696 feet**

**A space satellite made 3 orbits around the earth in 5 hours. The satellite traveled at an average speed of 15,490 miles per hour. How far did it travel?**

**Answer: 79,150 miles**

**A truck for delivering new cars weighs 9,350 pounds when empty. If the truck is loaded with 7 cars that each weigh 2,780 pounds, what is the total weight of the loaded truck?**

**Answer: 18,8510 pounds**

---

**TOPIC 4-h: Multiplying by a 1-Digit Factor: Larger Products**

**MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK A**

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Why Did the Cow Jump Up and Down?

Do each exercise and find your answer to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a @, shade in the box instead of writing a letter in it.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Expression</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38 × 40</td>
<td>G</td>
</tr>
<tr>
<td>2</td>
<td>27 × 50</td>
<td>E</td>
</tr>
<tr>
<td>3</td>
<td>596 × 80</td>
<td>T</td>
</tr>
<tr>
<td>4</td>
<td>946 × 200</td>
<td>L</td>
</tr>
<tr>
<td>5</td>
<td>875 × 700</td>
<td>E</td>
</tr>
<tr>
<td>6</td>
<td>4,389 × 900</td>
<td>S</td>
</tr>
<tr>
<td>7</td>
<td>1,757 × 6,000</td>
<td>B</td>
</tr>
<tr>
<td>8</td>
<td>6,082 × 3,000</td>
<td>C</td>
</tr>
<tr>
<td>9</td>
<td>84,936 × 5,000</td>
<td>K</td>
</tr>
<tr>
<td>10</td>
<td>7,560 × 90</td>
<td>A</td>
</tr>
<tr>
<td>11</td>
<td>4,183 × 800</td>
<td>I</td>
</tr>
<tr>
<td>12</td>
<td>90,075 × 4,000</td>
<td>D</td>
</tr>
<tr>
<td>13</td>
<td>$8.46 × 600</td>
<td>E</td>
</tr>
<tr>
<td>14</td>
<td>$63.94 × 7,000</td>
<td>R</td>
</tr>
<tr>
<td>15</td>
<td>$91.07 × 30</td>
<td>N</td>
</tr>
<tr>
<td>16</td>
<td>7,280 × 8,000</td>
<td>O</td>
</tr>
<tr>
<td>17</td>
<td>837 × 20</td>
<td>B</td>
</tr>
<tr>
<td>18</td>
<td>5,915 × 500</td>
<td>A</td>
</tr>
<tr>
<td>19</td>
<td>976,200 × 70</td>
<td>L</td>
</tr>
<tr>
<td>20</td>
<td>64 × 400</td>
<td>H</td>
</tr>
<tr>
<td>21</td>
<td>942 × 9,000</td>
<td>T</td>
</tr>
<tr>
<td>22</td>
<td>During the last 30 days, Bill ran 185 laps around the school track. If the track is 400 meters long, how far did Bill run altogether?</td>
<td>7.49 × 10^5 m</td>
</tr>
<tr>
<td>23</td>
<td>Judy swam 16 lengths of the pool doing backstroke. Then she swam 32 lengths using freestyle. If the pool is 50 meters long, how far did Judy swim altogether?</td>
<td>3.67 × 10^5 m</td>
</tr>
</tbody>
</table>

TOPIC 4-I: Multiplying by Multiples of 10, 100, and 1,000
Animal Cracks

Do each exercise below and find your answer in the code for that set of exercises. Each time the answer appears, write the letter of the exercise above it.

1. What animal is black, white, and green?

2. How can you tell the price of a pelican?

A school bought 45 band uniforms and 18 musical instruments. If the uniforms cost $89 each, what was the total cost of the uniforms? $
What Happens to Old Trucks?

Do each exercise below. Draw a straight line connecting the square by the exercise to the square by its answer. The line will cross a number and a letter. Write the letter in the matching numbered box at the bottom of the page.

1. $(72 \times 16) + 4,085$  
   2. $(49 \times 83) + 675$  
   3. $(96 \times 50) - 1,840$  
   4. $(67 \times 67) - 3,924$  
   5. $5,280 - (48 \times 89)$  
   6. $10,000 - (57 \times 94)$  
   7. $(76 \times 28) + (39 \times 69)$  
   8. $(58 \times 67) - (15 \times 10)$  
   9. $(7 \times 7 \times 92) - 40$  
  10. $6,000 - (5 \times 8 \times 46)$  
  11. $(2 \times 39 \times 5) + 751$  
  12. $(7 \times 92 \times 8) - 300$  
  13. $94 \times 47 \times 3$  
  14. $50 \times 58 \times 6$  
  15. $(60 \times 60) + (80 \times 80)$  
  16. $4 \times 4 \times 4 \times 70$  
  17. $3 \times 3 \times 3 \times 3 \times 3$  
  18. $(1 \times 333) - (0 \times 333)$

MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK A  © Creative Publications  
A-45 TOPIC 4-j: Multiplying by a 2-Digit Factor
BOOKS NEVER WRITTEN

The Great Diamond Robbery by

8,350  50,991  36,848  2,223  3,666  13,950  6,228  14,550  23,199  37,926  23,352

Tricky Rifle Shooting by

14,550  7,154  28,368  10,332  3,856  37,926  37,248  3,666  5,376  6,228  31,434

ABOVE ARE THE TITLES OF TWO "BOOKS NEVER WRITTEN." TO DECODE THE NAMES OF THEIR AUTHORS:

Do each exercise and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

\[
\begin{array}{ccc}
E & \times 57 & H \times 84 \\
\times 39 & & \times 64 \\
& I \times 98 & A \times 346 \\
& & \times 18 \\
N & \times 278 & U \times 739 \\
\times 84 & \times 69 & \\
C \times 591 & G \times 407 & \\
& \times 48 & \times 57 \\
Y \times 806 & L \times 658 & O \times 7 \times 63 \times 86 \\
\times 39 & \times 56 & K \times 28 \times (500 - 131) \\
& & J (195 \times 10) + (64 \times 100) \\
S & R \text{ Bizarre Middle School bought 15 computers and 6 printers. If each computer cost $790 and each printer cost $450, what was the total cost of the new equipment?} \\
& \text{How long would it take to watch all the episodes of that TV show?} \\
& \text{min} & \\
\end{array}
\]

A television show was produced for 3 years. Each year, 26 episodes were filmed. Each episode ran 47 minutes. How long would it take to watch all the episodes of that TV show?

\[\text{min}\]

\[\$\]
Hidden Message

Do each exercise and find your answers in the rectangle below. The correct answers run across from left to right. Shade in the boxes containing each correct answer.

When you finish, there will be 28 boxes not shaded. Write the letters from these 28 boxes in the spaces at the bottom of the page. A hidden message will appear!

1. \( \frac{375}{28} \)
2. \( \frac{964}{76} \)
3. \( \frac{5472}{14} \)
4. \( \frac{8669}{93} \)
5. \( \frac{6048}{85} \)
6. \( \frac{3825}{47} \)
7. \( \frac{7354}{69} \)
8. \( \frac{9007}{53} \)
9. \( 60 \times 60 \times 24 \)
10. \( (100 \times 100) - (99 \times 99) \)
11. The Parliament Building in Victoria, British Columbia, is illuminated using 3,270 light bulbs. If each is a 75-watt bulb, how much electric power is needed altogether?
12. A motion picture camera at normal speed takes 24 pictures per second. How many pictures are in a movie that is 90 minutes long? (1 min = 60 sec)

Hidden Message:

```
SMALL FAT AD POLES SMART TOPPC AN DLESOL
LEGREAT CTALKING ORANDS TANDR ENIC
KTENTALKOGIRAFFETABLESHEATING
```

Topics:

- Multiplying by a 2-Digit Factor
- Dividing by a 3-Digit Factor
How Do Clocks Communicate?

Do each exercise below. Find your answer in the answer column and notice the letter next to it. Look for this letter in the string of letters near the bottom of the page and CROSS IT OUT each time it appears. When you finish, write the remaining letters in the rectangle at the bottom of the page.

1. \( \frac{714}{325} \)
2. \( \frac{629}{731} \)
3. \( \frac{845}{476} \)
4. \( \frac{598}{308} \)
5. \( \frac{920}{659} \)
6. \( \frac{357}{907} \)
7. \( \frac{6,092}{444} \)
8. \( \frac{8,376}{608} \)
9. \( \frac{1,869}{952} \)

10. \( 7,004 \times 704 \)
11. \( (308 \times 200) + (38 \times 300) \)
12. \( 52 \times 51 \times 50 \)
13. \( (900 \times 600) - (9,000 \times 60) \)
14. The image on a computer monitor is composed of many small dots of light. A screen with a diagonal measure of 12 inches might have 200 rows of dots with 320 dots in each row. How many dots is this altogether?
15. The letter "K" often stands for kilo, meaning 1,000. In computer terms, however, K stands for 1,024. If a computer has 256K of memory, it has room for 256 x 1,024 bytes of information. How many bytes is this?

**ANSWER TO PUZZLE:**

**TOPIC 4-k: Multiplying by a 3-Digit Factor**
How Did Captain Hook Get Injured?

Do each exercise and find your answer in the set of answers to its right. Write the letter of the exercise in the box containing the number of the answer.

I. Write using an exponent.

- H: $3 \times 3 \times 3 \times 3$
- E: $4 \times 4 \times 4 \times 4 \times 4$
- O: $9 \times 9$
- I: $7 \times 7 \times 7$
- W: $10 \times 10 \times 10 \times 10$
- H: $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$
- I: $7 \times 7 \times 7$
- W: $10 \times 10 \times 10 \times 10$
- H: $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$
- I: $7 \times 7 \times 7$
- W: $10 \times 10 \times 10 \times 10$
- H: $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$
- I: $7 \times 7 \times 7$
- W: $10 \times 10 \times 10 \times 10$
- H: $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$

II. Write the product.

- E: $4^2$
- H: $2^3$
- I: $10^4$
- A: $6^3$
- H: $5^6$
- N: $9^3$
- N: $7^2$
- O: $5^3$
- T: $25$
- E: $12^2$
- S: $8^4$
- D: $10^7$

III. Write as a power of 10.

- E: $1,000$
- W: $100,000$
- N: $10,000,000$
- I: $100$
- D: $1,000,000,000$
- T: $10$

IV. Solve the equation.

- G: $4 \times 10^2 = n$
- H: $7 \times 10^4 = n$
- S: $n \times 10^3 = 5,000$
- W: $9 \times 10^5 = n$
- P: $4 \times 10^6 = n$
- R: $n \times 10^7 = 80,000,000$

MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK A
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A-49

TOPIC 41: Exponents
**When Do Stores Sell Most of Their Tanning Oil?**

Decide whether you would choose mental math, estimation, or a tool (paper and pencil or calculator) to solve each problem. CIRCLE the letter in the appropriate column next to the problem.

Then solve the problem. Find the answer at the bottom of the page and write the letter you circled under it.

Choose:  **M** mental math,  **E** estimation,  **T** tool

|   | Prime Jr. High has 41 classrooms. Each classroom has 38 desks. About how many desks are in the school altogether? |   | Prime Jr. High buys pencils to sell at the school store. There are 144 pencils in a box, and there are 24 boxes in a carton. How many pencils are in 3 cartons? |   | The school bought 40 new electronic typewriters for its typing classes. If each typewriter cost $500, what was the total cost of the typewriters? |   | This year 688 people came to the Prime Halloween Carnival. They bought an average of 21 game tickets per person. About how many tickets were sold altogether? |   | Prime Jr. High had a campaign to raise $10,000 for new computers. A local bank contributed $3,000. The PTA raised $2,000 from parents and students. How much more money must be raised to reach the goal of $10,000? |   | Each day, Michelle attends 7 different classes. Each class is 50 minutes long. She also has a 10-minute homeroom class. How many minutes does Michelle spend in class each day? |   | The students at Prime Jr. High use an average of 6 different textbooks. If there are 914 students at the school, about how many textbooks are being used altogether? |   | Last year, Scott went to school 6 hours a day for 180 days. He also watched an average of 23 hours of TV each week for 52 weeks. How many more hours did Scott spend watching TV than going to school? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Prime Jr. High has 41 classrooms. Each classroom has 38 desks. About how many desks are in the school altogether? |   | Prime Jr. High buys pencils to sell at the school store. There are 144 pencils in a box, and there are 24 boxes in a carton. How many pencils are in 3 cartons? |   | The school bought 40 new electronic typewriters for its typing classes. If each typewriter cost $500, what was the total cost of the typewriters? |   | This year 688 people came to the Prime Halloween Carnival. They bought an average of 21 game tickets per person. About how many tickets were sold altogether? |   | Prime Jr. High had a campaign to raise $10,000 for new computers. A local bank contributed $3,000. The PTA raised $2,000 from parents and students. How much more money must be raised to reach the goal of $10,000? |   | Each day, Michelle attends 7 different classes. Each class is 50 minutes long. She also has a 10-minute homeroom class. How many minutes does Michelle spend in class each day? |   | The students at Prime Jr. High use an average of 6 different textbooks. If there are 914 students at the school, about how many textbooks are being used altogether? |   | Last year, Scott went to school 6 hours a day for 180 days. He also watched an average of 23 hours of TV each week for 52 weeks. How many more hours did Scott spend watching TV than going to school? |
| 1 | M | M | E | E | M | N | N | O | N | M | N | E | E |
| 2 | B | B | F | F | Y | N | C | L | L | E | S | H | D | F |
| 3 | B | B | E | E | Y | N | C | L | L | E | S | H | D | F |
| 4 | B | B | E | E | Y | N | C | L | L | E | S | H | D | F |
| 5 | B | B | E | E | Y | N | C | L | L | E | S | H | D | F |
| 6 | B | B | E | E | Y | N | C | L | L | E | S | H | D | F |
| 7 | B | B | E | E | Y | N | C | L | L | E | S | H | D | F |
| 8 | B | B | E | E | Y | N | C | L | L | E | S | H | D | F |
| 9 | B | B | E | E | Y | N | C | L | L | E | S | H | D | F |

<table>
<thead>
<tr>
<th></th>
<th>$5,000</th>
<th>$20,000</th>
<th>$7,000</th>
<th>116</th>
<th>1,600</th>
<th>360</th>
<th>250</th>
<th>14,000</th>
<th>5,400</th>
<th>10,368</th>
<th>2,059</th>
</tr>
</thead>
</table>

**TOPIC 4-m: Problem Solving: Choosing a Calculation Method**

**MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK A**

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These are called CHAIN EXERCISES. Do the steps in order from left to right for each exercise. Find your answer in the code at the bottom of the page. Each time the answer appears, print the letter from the end of that exercise above it. (HINT Look for steps you can do mentally.)

Take 387 ➔ add 29 ➔ multiply by 8 ➔ subtract 1,725 = G
Take 69 ➔ multiply by 94 ➔ multiply by 10 ➔ subtract 5,581 = O
Take 7,000 ➔ subtract 4,267 ➔ add 163 ➔ multiply by 6 = T
Take 90 ➔ multiply by 80 ➔ add 800 ➔ subtract 7,500 = E
Take 793 ➔ add 793 ➔ multiply by 40 ➔ subtract 62,600 = A
Take 100 ➔ multiply by 328 ➔ subtract 29,014 ➔ multiply by 7 = I
Take 5 ➔ multiply by 800 ➔ subtract 2,760 ➔ subtract 673 = Y
Take 4,004 ➔ subtract 3,197 ➔ multiply by 59 ➔ add 887 = V
Take 200 ➔ subtract 162 ➔ multiply by 80 ➔ add 4,076 = M
Take 94 ➔ multiply by 77 ➔ multiply by 10 ➔ add 6,950 = K
Take 500 ➔ multiply by 50 ➔ subtract 24,800 ➔ multiply by 47 = C
Take 86 ➔ multiply by 73 ➔ multiply by 1 ➔ subtract 5,290 = S
Take 999 ➔ multiply by 0 ➔ multiply by 999 ➔ add 999 = N

Title: CASH STASH

<table>
<thead>
<tr>
<th>988</th>
<th>840</th>
<th>48,500</th>
<th>26,502</th>
<th>999</th>
<th>1,603</th>
<th>960</th>
<th>7,116</th>
<th>59,279</th>
<th>999</th>
<th>500</th>
<th>567</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,116</td>
<td>840</td>
<td>79,330</td>
<td>500</td>
<td>988</td>
<td>28,402</td>
<td>9,400</td>
<td>500</td>
<td>999</td>
<td>17,376</td>
<td>988</td>
<td></td>
</tr>
</tbody>
</table>

MIDDLE SCHOOL MATH WITH PIZAZZ! BOOK A © Creative Publications

A-51 TOPIC 4-n: Review: Addition, Subtraction, Multiplication
CRYPTIC QUIZ

1. What happened when Tarzan called the King of the Jungle?

\[ \begin{array}{ccccccccccccc}
11 & 7 & 3 & 17 & 16 & 6 & 13 & 1 & 5 & 14 & 12 & 9 & 14 & 2
\end{array} \]

2. Whom did Smedley Jolt ask to help him cook hamburgers?

\[ \begin{array}{ccccccccccccc}
7 & 16 & 14 & 10 & 15 & 16 & 17 & 17 & 4 & 15 & 16 & 3 & 13 & 8
\end{array} \]

Do each exercise below. Find your answer in the appropriate answer column and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

\[
\begin{array}{c}
1. 7,388 + 5,967 = 13,355 \\
2. 947 - 269 = 678 \\
3. 8,176 \times 8 = 65,408
\end{array}
\]

\[
\begin{array}{c}
4. 69 \times 74 = 5,086 \\
5. 5,086 + 397 = 5,483 \\
6. 879 \times 95 = 83,695
\end{array}
\]

\[
\begin{array}{c}
7. 274 \times 600 = 164,400 \\
8. (60 \times 50) - (40 \times 30) = 830
\end{array}
\]

\[
\begin{array}{c}
9. 8,501 - 3,934 = 4,567 \\
10. 72,600 - 6,854 = 65,746 \\
11. 58,493 \times 6 = 350,958
\end{array}
\]

\[
\begin{array}{c}
12. 17,338 \times 49 = 848,406 \\
13. 4,058 \times 79 = 320,582 \\
14. 836 \times 406 = 344,516
\end{array}
\]

\[
\begin{array}{c}
15. 10,000 - (8 \times 5 \times 54) = 8,320 \\
16. (100 \times 27) + (10 \times 693) = 8,660
\end{array}
\]

\[
\begin{array}{c}
17. \text{Gyro bought a car priced at } \$7,589. \text{ He agreed to make payments of } \$260 \text{ per month for 36 months. How much more than the actual price will Gyro pay?}
\end{array}
\]

\[\$344,516\]
What Trick Can Any Horse Do?

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

1. The United States has about 1,800 daily newspapers, 8,400 weekly newspapers, and 550 semiweekly newspapers. How many is that altogether?

2. The Sunday Times had 14 sections with an average of 16 pages per section. How many pages were in the entire newspaper?

3. The chart at the right shows the circulation of the Daily Planet in a recent week.
   A. How many copies were sold on the weekend (Saturday and Sunday)?
   B. How many more copies were sold on Sunday than on the day with the second highest circulation?
   C. Round each figure to the nearest 1,000. Then add to estimate the total circulation for the week.

4. An offset press can print about 270 sheets of paper per minute. Each sheet is cut to make 8 newspaper pages. How many newspaper pages can be printed in one hour?

5. A subscription to the Daily Planet costs $19 per month for delivery every day, or $15 per month for delivery every day except Sunday. How much does it cost to receive the newspaper every day for a year?

6. Express Press delivers 374 newspapers each day Monday through Saturday. On Sunday, it delivers 590 newspapers. How many newspapers does Express Press deliver in a week?

7. For a half-page advertisement, a newspaper charges $965 for each day Monday through Saturday and $1,270 for Sunday. How much does it cost to run a half-page ad for one week?

8. For classified advertising, a newspaper charges $11 per line for each day Monday through Saturday and $15 per line for Sunday. How much does it cost to run a 6-line ad for one week?

9. Daily newspaper circulation in the United States averages about 300 copies for every 1,000 persons. At this rate, how many newspapers would be sold in a town of 50,000 people?

The United States has about 1,800 daily newspapers, 8,400 weekly newspapers, and 550 semiweekly newspapers. How many is that altogether?

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Daily newspaper circulation in the United States averages about 300 copies for every 1,000 persons. At this rate, how many newspapers would be sold in a town of 50,000 people?
Why Did The Mama Flea Look So Sad?

Do each exercise mentally and find your answer in the corresponding set of answer boxes. Write the letter of the exercise in the box containing the answer.

<table>
<thead>
<tr>
<th>L</th>
<th>280 ÷ 4</th>
<th>R</th>
<th>7 ( \div ) 5,600</th>
<th>E</th>
<th>2,400 ÷ 4</th>
<th>W</th>
<th>3 ( \div ) 2,700</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>6,300 ÷ 9</td>
<td>L</td>
<td>5 ( \div ) 400</td>
<td>S</td>
<td>540 ÷ 6</td>
<td>D</td>
<td>7 ( \div ) 420</td>
</tr>
<tr>
<td>E</td>
<td>180 ÷ 6</td>
<td>H</td>
<td>8 ( \div ) 64,000</td>
<td>I</td>
<td>36,000 ÷ 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>24,000 ÷ 8</td>
<td></td>
<td></td>
<td>E</td>
<td>30,000 ÷ 5</td>
<td>R</td>
<td>2 ( \div ) 800</td>
</tr>
<tr>
<td>i</td>
<td>15,000 ÷ 3</td>
<td>T</td>
<td>5 ( \div ) 10,000</td>
<td>H</td>
<td>81,000 ÷ 9</td>
<td>T</td>
<td>4 ( \div ) 360</td>
</tr>
<tr>
<td>O</td>
<td>4,000 ÷ 8</td>
<td>G</td>
<td>4 ( \div ) 200</td>
<td>O</td>
<td>240 ÷ 6</td>
<td>D</td>
<td>3 ( \div ) 90</td>
</tr>
<tr>
<td>N</td>
<td>1,400 ÷ 7</td>
<td></td>
<td></td>
<td>S</td>
<td>20 ÷ 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>1,400 ÷ 2</td>
<td>O</td>
<td>3 ( \div ) 60</td>
<td>E</td>
<td>2,100 ÷ 7</td>
<td>G</td>
<td>8 ( \div ) 32,000</td>
</tr>
</tbody>
</table>
## TOPIC 5-b: Mental Math: Special Quotients

### What Tool Did the Brontosaurus Use to Build His House?

Divide mentally, write your answer, and then mark it in the answer column. For each set of exercises, there is only one extra answer. Write the letter of this answer in the corresponding box at the right.

<table>
<thead>
<tr>
<th>Column</th>
<th>Exercises</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>180 ÷ 3</td>
<td>A, B</td>
</tr>
<tr>
<td></td>
<td>445 ÷ 5</td>
<td>G, H</td>
</tr>
<tr>
<td></td>
<td>44.2 ÷ 7</td>
<td>F, I</td>
</tr>
<tr>
<td></td>
<td>540 ÷ 6</td>
<td>M, N</td>
</tr>
<tr>
<td>2</td>
<td>14,000 ÷ 20</td>
<td>L, O</td>
</tr>
<tr>
<td></td>
<td>5,600 ÷ 80</td>
<td>Y, Z</td>
</tr>
<tr>
<td></td>
<td>36,000 ÷ 90</td>
<td>V, W</td>
</tr>
<tr>
<td></td>
<td>280 ÷ 70</td>
<td>C, D</td>
</tr>
<tr>
<td>3</td>
<td>1,500 ÷ 300</td>
<td>P, Q</td>
</tr>
<tr>
<td></td>
<td>7,200 ÷ 90</td>
<td>R, S</td>
</tr>
<tr>
<td></td>
<td>48,000 ÷ 600</td>
<td>T, U</td>
</tr>
<tr>
<td></td>
<td>40,000 ÷ 800</td>
<td>V, W</td>
</tr>
<tr>
<td>4</td>
<td>400 ÷ 1,200</td>
<td>W, X</td>
</tr>
<tr>
<td></td>
<td>900 ÷ 63,000</td>
<td>E, F</td>
</tr>
<tr>
<td></td>
<td>70 ÷ 21,000</td>
<td>G, H</td>
</tr>
</tbody>
</table>
**Why Did Workers at the Raisin Factory Want to Keep Some Raisins for Themselves?**

Choose the best replacement for the dividend so that a basic fact can be used to estimate the quotient. Then write the estimate. Write the letter of your replacement in the box above the estimate at the bottom of the page.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>429 ÷ 7</td>
<td>2</td>
<td>354 ÷ 4</td>
<td>3</td>
<td>313 ÷ 6</td>
</tr>
<tr>
<td>Y</td>
<td>400</td>
<td>D</td>
<td>350</td>
<td>E</td>
<td>300</td>
</tr>
<tr>
<td>A</td>
<td>420</td>
<td>I</td>
<td>360</td>
<td>L</td>
<td>310</td>
</tr>
<tr>
<td>N</td>
<td>430</td>
<td>X</td>
<td>370</td>
<td>C</td>
<td>320</td>
</tr>
</tbody>
</table>

| 6 | 1,253 ÷ 3 | 7 | 7,049 ÷ 8 | 8 | 2,319 ÷ 7 | 9 | 1,675 ÷ 90 | 10 | 3,168 ÷ 40 |
| G | 1,000 | K | 6,400 | T | 2,100 | D | 1,700 | U | 2,800 |
| D | 1,200 | E | 7,100 | S | 2,300 | I | 1,800 | R | 3,100 |
| V | 1,300 | A | 7,200 | L | 2,800 | T | 2,000 | H | 3,200 |

| 11 | 43,509 ÷ 6 | 12 | 26,016 ÷ 5 | 13 | 46,370 ÷ 80 | 14 | 20,991 ÷ 30 | 15 | 3,054 ÷ 70 |
| E | 42,000 | N | 25,000 | S | 46,000 | T | 20,000 | W | 2,800 |
| A | 44,000 | T | 26,000 | Y | 48,000 | R | 21,000 | R | 3,000 |
| O | 48,000 | F | 27,000 | N | 50,000 | S | 24,000 | P | 3,500 |

| 16 | 942,789 | 17 | 602,031 | 18 | 4003,646 | 19 | 8002,950 | 20 | 50318,740 |
| T | 4,000 | S | 1,800 | R | 3,200 | R | 2,400 | A | 300,000 |
| D | 4,300 | W | 2,000 | N | 3,600 | H | 3,000 | I | 320,000 |
| Y | 4,500 | P | 2,400 | S | 3,700 | P | 3,200 | E | 350,000 |
What Can We Learn From A Centipede?

1. Round the divisor to its greatest place.
2. Change the dividend to a number easy to divide by the rounded divisor.
3. Divide to estimate the quotient.

Use the procedure above to rewrite each exercise and estimate the quotient. Find your estimate at the bottom of the page. Write the letter of the exercise above it. (The first exercise has been done for you.)

N 2,341 ÷ 79
2,400 ÷ 80 = 30

E 3,625 ÷ 52

I 7,049 ÷ 88

O 246 ÷ 43

A 287 ÷ 68

N 5,518 ÷ 609

H 1,447 ÷ 314

N 49,068 ÷ 71

I 10,935 ÷ 36

E 41,140 ÷ 49

N 47,275 ÷ 783

W 79,800 ÷ 906

Y 63 ÷ 3,209

A 789 ÷ 5,711

H 27 ÷ 5,926

T 21 ÷ 79,500

M It is 318 miles from Los Angeles to Yosemite National Park. At an average speed of 41 miles per hour, about how many hours does it take to drive this distance?

C Kathy earns $26,190 per year as a designer. About how much does Kathy earn per week? (1 year = 52 weeks)

F While running for office, Trix Smile shook 52,270 hands and kissed 3,509 babies. If his campaign lasted 88 days, estimate the average number of babies kissed each day.

$
Why Does It Take a Baseball Player So Long To Run From Second Base to Third Base?

Do each exercise and find your answer in the appropriate answer column. Write the letter of the exercise in the box containing the number of the answer.

<table>
<thead>
<tr>
<th>ANSWERS left side</th>
<th>ANSWERS right side</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 3 R2</td>
<td>6 3 R1</td>
</tr>
<tr>
<td>25 3 R3</td>
<td>1 3 R2</td>
</tr>
<tr>
<td>4 3 R5</td>
<td>15 4 R3</td>
</tr>
<tr>
<td>21 4 R1</td>
<td>12 4 R4</td>
</tr>
<tr>
<td>2 4 R2</td>
<td>23 4 R5</td>
</tr>
<tr>
<td>34 5 R5</td>
<td>32 5 R1</td>
</tr>
<tr>
<td>10 5 R7</td>
<td>3 5 R3</td>
</tr>
<tr>
<td>8 6 R2</td>
<td>27 6 R3</td>
</tr>
<tr>
<td>30 6 R4</td>
<td>18 6 R5</td>
</tr>
<tr>
<td>14 7 R1</td>
<td>29 7 R3</td>
</tr>
<tr>
<td>5 7 R2</td>
<td>19 7 R4</td>
</tr>
<tr>
<td>26 8 R2</td>
<td>7 8 R2</td>
</tr>
<tr>
<td>11 8 R1</td>
<td>28 8 R5</td>
</tr>
<tr>
<td>31 9 R1</td>
<td>33 8 R8</td>
</tr>
<tr>
<td>22 9 R3</td>
<td>20 9 R1</td>
</tr>
<tr>
<td>16 9 R6</td>
<td>13 9 R5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Left Side</th>
<th>Right Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>S 3 R2</td>
<td>T 4 R15</td>
</tr>
<tr>
<td>D 2 R19</td>
<td>E 4 R27</td>
</tr>
<tr>
<td>O 8 R60</td>
<td>T 5 R17</td>
</tr>
<tr>
<td>H 5 R22</td>
<td>O 7 R50</td>
</tr>
<tr>
<td>E 6 R35</td>
<td>H 6 R59</td>
</tr>
<tr>
<td>L 9 R80</td>
<td>N 7 R33</td>
</tr>
<tr>
<td>I 4 R39</td>
<td>R 8 R29</td>
</tr>
<tr>
<td>T 7 R69</td>
<td>E 8 R43</td>
</tr>
<tr>
<td>P 3 R28</td>
<td>I 4 R34</td>
</tr>
<tr>
<td>A 9 R52</td>
<td>E 3 R23</td>
</tr>
<tr>
<td>H 6 R50</td>
<td>S 9 R40</td>
</tr>
<tr>
<td>M 5 R38</td>
<td>T 7 R47</td>
</tr>
</tbody>
</table>

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
If the Sun Were Famous, Where Would It Go?

Do each exercise and find your answer in the answer columns. Write the letter of the answer in the box containing the number of the exercise. If the answer has a 0, shade in the box instead of writing a letter in it.

<table>
<thead>
<tr>
<th>1</th>
<th>71239</th>
<th>2</th>
<th>41347</th>
<th>3</th>
<th>91515</th>
<th>4</th>
<th>51314</th>
<th>5</th>
<th>61504</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>3189</td>
<td>7</td>
<td>2175</td>
<td>8</td>
<td>4187</td>
<td>9</td>
<td>81632</td>
<td>10</td>
<td>71398</td>
</tr>
<tr>
<td>11</td>
<td>6192</td>
<td>12</td>
<td>91432</td>
<td>13</td>
<td>51299</td>
<td>14</td>
<td>3149</td>
<td>15</td>
<td>81347</td>
</tr>
<tr>
<td>16</td>
<td>146 ÷ 4</td>
<td>17</td>
<td>684 ÷ 7</td>
<td>18</td>
<td>65 ÷ 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>The <strong>Rockem</strong> Band earned $390 for a performance. If the 6 band members divide the money equally, how much does each get?</td>
<td>20</td>
<td>Myles Tugo drove 441 miles from Buffalo to New York City. It took him 9 hours. What was his average speed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### What Is Green, Turns In Circles, and Scratches Itself?

Find the answer to each exercise in the set of answers under the exercise. Cross out the letter above each answer. When you finish, the answer to the title question will remain!

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4153</td>
<td>3887</td>
<td>71964</td>
<td>816760</td>
<td>512918</td>
<td>52859</td>
<td>41594</td>
<td>14594</td>
<td>52859</td>
<td>748201</td>
<td>29546</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>9</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td>19</td>
<td>18</td>
<td>17</td>
<td>16</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>85917</td>
<td>3954</td>
<td>614420</td>
<td>2905</td>
<td>611769</td>
<td>86760</td>
<td>2918</td>
<td>63877</td>
<td>9725</td>
<td>74801</td>
<td>6189</td>
</tr>
</tbody>
</table>

**Dr. Drat had a hot tub built for $7,500. He made a down payment of $2,500 and then paid the balance in 8 equal payments. How much was each payment?**

**Spa World advertised on the radio for 3 minutes on Saturday and 2 minutes on Sunday. The total cost was $337.5. What was the cost per minute?**

**Topic 5-d: Dividing by a 1-Digit Divisor**

**Middle School Math With Pizzazz! Book A**

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TO DECODE THESE TWO DAFFYNITIONS: Do each exercise below. Find your answer in the appropriate answer column and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.
<table>
<thead>
<tr>
<th></th>
<th>Scott has 100 stamps to put in an album. He puts 8 stamps on each page.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A. How many pages will be completely filled?</td>
</tr>
<tr>
<td></td>
<td>B. How many stamps will be left for an unfilled page?</td>
</tr>
<tr>
<td></td>
<td>C. How many pages will be used altogether?</td>
</tr>
<tr>
<td></td>
<td>A group of 20 friends are going camping. They will sleep in tents</td>
</tr>
<tr>
<td>2</td>
<td>that each hold 3 people.</td>
</tr>
<tr>
<td></td>
<td>A. How many tents will be full?</td>
</tr>
<tr>
<td></td>
<td>B. How many people will be left for a tent that is not full?</td>
</tr>
<tr>
<td></td>
<td>C. How many tents will be needed altogether?</td>
</tr>
<tr>
<td></td>
<td>The 739 students and teachers at Merry Middle School are going on</td>
</tr>
<tr>
<td>3</td>
<td>a field trip.Each bus holds 50 passengers.</td>
</tr>
<tr>
<td></td>
<td>A. How many buses will be full?</td>
</tr>
<tr>
<td></td>
<td>B. How many people will be left for a bus that is not full?</td>
</tr>
<tr>
<td></td>
<td>C. How many buses will be needed altogether?</td>
</tr>
<tr>
<td></td>
<td>Hugo made 100 ounces of lemonade. How many 8-ounce glasses can he</td>
</tr>
<tr>
<td>4</td>
<td>fill completely with this amount of lemonade?</td>
</tr>
<tr>
<td></td>
<td>An orchard has 739 apple trees to plant. If 50 trees are planted in</td>
</tr>
<tr>
<td></td>
<td>each row, how many are left after the last complete row is planted?</td>
</tr>
<tr>
<td></td>
<td>The coach needs 20 tennis balls for a tournament. If tennis balls</td>
</tr>
<tr>
<td>5</td>
<td>are sold in cans containing 3 balls, how many cans should the coach</td>
</tr>
<tr>
<td></td>
<td>buy?</td>
</tr>
<tr>
<td></td>
<td>A total of 100 kids signed up to play soccer at the park. Each team</td>
</tr>
<tr>
<td>6</td>
<td>has 8 players. Extra players are substitutes. How many substitutes</td>
</tr>
<tr>
<td></td>
<td>are there?</td>
</tr>
<tr>
<td></td>
<td>Maria has $20 to rent video movies. If it costs $3 to rent each</td>
</tr>
<tr>
<td>7</td>
<td>movie, how many movies can she rent?</td>
</tr>
<tr>
<td></td>
<td>A teacher needs 739 sheets of paper for a class project. The paper</td>
</tr>
<tr>
<td></td>
<td>is sold in packs of 50 sheets each. How many packs should the teacher</td>
</tr>
<tr>
<td></td>
<td>buy?</td>
</tr>
</tbody>
</table>
Maze Phrase
Do each exercise and find your answers in the maze. SHADE IN each room that contains a correct answer.

Then find a path to the Treasure that goes only through rooms you have NOT shaded in. The words in those rooms will form an a-mazing message!

1. 4,430 + 6
2. 8,869 + 3
3. 2,854 + 7
4. 16,298 + 5
5. 22,540 + 8
6. 27,962 + 4
7. 45,747 + 9
8. 42,765 + 7
9. 76,992 + 2
10. 28,560 + 6
11. 25,217 + 3
12. 87,13718

A school district received a grant of $6,840. The money was divided equally among the 7 elementary schools and 2 high schools in the district. How much did each school receive?

The Schmaltz Band bought an amplifier for $1,260 and two speakers at $375 each. If the 5 members of the band divide the total cost equally, how much will each pay?
How Are Canvas Sheets Attached to Ships?

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

1. Deke, Zeke, and Geke each bowled three games.
   A. What was Deke's average score?
   B. What was Zeke's average score?
   C. What was Geke's average score?

<table>
<thead>
<tr>
<th>Name</th>
<th>Game 1</th>
<th>Game 2</th>
<th>Game 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deke</td>
<td>126</td>
<td>153</td>
<td>135</td>
</tr>
<tr>
<td>Zeke</td>
<td>109</td>
<td>82</td>
<td>97</td>
</tr>
<tr>
<td>Geke</td>
<td>127</td>
<td>138</td>
<td>155</td>
</tr>
</tbody>
</table>

2. In 8 football plays, Grunge Helmet had gains of 5 yards, 12 yards, 7 yards, 0 yards, 3 yards, 4 yards, 15 yards, and 2 yards. What was his average gain per play?

3. The scores of 4 students on 5 different tests are given in the table. Find the following:
   A. The average of Sam's scores.
   B. The average of Teri's scores.
   C. The average of Kim's scores.
   D. The average of the scores on Test 1.
   E. The average of the scores on Test 4.

<table>
<thead>
<tr>
<th>Name</th>
<th>Test 1</th>
<th>Test 2</th>
<th>Test 3</th>
<th>Test 4</th>
<th>Test 5</th>
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</thead>
<tbody>
<tr>
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<td>93</td>
<td>91</td>
<td>75</td>
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<td>Teri</td>
<td>87</td>
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<td>74</td>
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<td>Andy</td>
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<td>Kim</td>
<td>79</td>
<td>86</td>
<td>100</td>
<td>94</td>
<td>91</td>
</tr>
</tbody>
</table>

4. Zorna ran 6 laps around a 440-yard track. Her lap times were 89 seconds, 93 seconds, 97 seconds, 102 seconds, 95 seconds, and 88 seconds. Find the following:
   A. The average time for the first 3 laps.
   B. The average time for the last 3 laps.
   C. The average time for all 6 laps.

5. A salesman for Tickle Toys travels in 4 different states. In 9 weeks, he traveled a total of 18,846 miles. Find the average number of miles he traveled per week.

6. Elmo Buckets played in 7 basketball games. Altogether he scored 88 field goals (2 points each) and 13 free throws (1 point each). Find the average number of points Elmo scored per game.

7. Racquet World sells an average of 45 tennis racquets per month. At this rate, how many racquets are sold in one year?

<table>
<thead>
<tr>
<th>BO</th>
<th>LT</th>
<th>AT</th>
<th>WI</th>
<th>ND</th>
<th>PA</th>
<th>TH</th>
<th>AT</th>
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<td>IT</td>
<td>MA</td>
<td>ST</td>
<td>OP</td>
<td>EN</td>
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<td>85</td>
<td>80</td>
<td>8 yd</td>
<td>2,094</td>
<td>96</td>
<td>90</td>
<td>91 s</td>
<td>94 s</td>
<td>31</td>
<td>6 yd</td>
</tr>
</tbody>
</table>
What's Wrong with Coal Miners Looking for Gold?

Do each exercise below. Find your answer in the appropriate answer column and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

1. Estimate the quotient: \( 54,290 \div 904 \)
2. \( 6,402 - 1,749 \)
3. \( 9,876 \times 8 \)
4. \( 785 \times 700 \)
5. \( 6 \div 232 \)
6. \( 9 \div 5,563 \)
7. \( 55,294 \div 87,610 \)
8. \( 2,385 \div 696 \)
9. \( 40,000 \div 8 \)
10. \( (53 \times 100) - (72 \times 10) \)
11. \( 4^3 \times 3^4 \)
12. \( 7 \div 4,931 \)
13. \( 8 \div 23,761 \)
14. \( 30 \div 24,000 \)
15. Estimate the quotient: \( 54,290 \div 904 \)
16. Rex Robot Co. shipped 38 HotBots and 20 RotBots. Each HotBot weighs 15 kg, and each RotBot weighs 9 kg. What was the total weight of the shipment?
17. Coach McDuff invited 30 kids to a picnic. He wants to have 2 hot dogs for each kid. If hot dogs come in packs of 8, how many packs should he buy?
Why Do Dragons Sleep During The Day?

Solve each problem below and find your solution in the answer column. Write the letter of the answer in each box containing the number of the problem.

1. During winter vacation the 5 members of the Scott family went on vacation to a ski resort. They drove 336 miles in 7 hours. What was their average speed?

2. The Scotts rented a condominium at the resort for 6 nights. The price was $120 per night for 2 people, plus $15 per night for each additional person.
   A. How much did the Scotts pay per night?
   B. How much did the Scotts pay for 6 nights?

3. Lift tickets at the resort cost $28 per day for adults and $19 per day for children under 12. The Scotts skied for 5 days.
   A. How much did the Scotts pay for lift tickets each day?
   B. How much did the Scotts pay for lift tickets altogether?

4. The top of the mountain has an elevation of 11,640 feet. How much higher is this than the base of the ski area, which has an elevation of 8,385 feet?

5. The ski resort has 9 chairlifts. Each chairlift has a capacity of 870 people per hour. The lifts operate 7 hours per day.
   A. What is the total lift capacity per hour?
   B. What is the total lift capacity per day?

6. One evening the Scotts went to the Chalet Restaurant for dinner. The bill was $67.65. Mr. Scott paid with four $20 bills. How much change should he have received?

7. A total of 19,035 people skied at the resort during the 5 days that the Scotts skied. What was the average number of skiers per day?

8. During their vacation the Scotts took 173 pictures. They put them in an album with 6 pictures on each page.
   A. How many pages were completely filled?
   B. How many pictures were left for an unfilled page?

<table>
<thead>
<tr>
<th>The Scott Family</th>
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</thead>
<tbody>
<tr>
<td>name</td>
</tr>
<tr>
<td>Mr. Scott</td>
</tr>
<tr>
<td>Mrs. Scott</td>
</tr>
<tr>
<td>Dan Scott</td>
</tr>
<tr>
<td>Susan Scott</td>
</tr>
<tr>
<td>Mike Scott</td>
</tr>
</tbody>
</table>

Answers:

<table>
<thead>
<tr>
<th></th>
<th>W</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>E</td>
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<td></td>
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</tbody>
</table>

8A 6 2A 4 5B 3B 7 2A 8A 3A 6 1 8B 8A 7 8B 3B 5A 6 8A 2B

TOPIC 5: Problem Solving: Mixed Applications
Did You Hear About ...

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>H</td>
<td>I</td>
<td>J</td>
<td>K</td>
<td>L</td>
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<tr>
<td>M</td>
<td>N</td>
<td>O</td>
<td>P</td>
<td>Q</td>
<td>R</td>
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</tbody>
</table>

Do each exercise and find your answer in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

### Answers A–I:

<table>
<thead>
<tr>
<th>Exercise</th>
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<tr>
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<td>30 129</td>
</tr>
<tr>
<td>8 TO</td>
<td>80 588</td>
</tr>
<tr>
<td>54 R18 HIS</td>
<td>50 313</td>
</tr>
<tr>
<td>9 R17 FIT</td>
<td>90 506</td>
</tr>
<tr>
<td>4 R9 THE 92</td>
<td>40 393</td>
</tr>
<tr>
<td>6 R13 WHO</td>
<td>60 480</td>
</tr>
<tr>
<td>17 R21 HAIR</td>
<td>70 1,616</td>
</tr>
<tr>
<td>24 R11 GO</td>
<td>30 1,638</td>
</tr>
<tr>
<td>9 R33 HAD</td>
<td>40 701</td>
</tr>
<tr>
<td>7 R28 KID</td>
<td>90 3,480</td>
</tr>
<tr>
<td>23 R6 GET</td>
<td>50 4,600</td>
</tr>
<tr>
<td>16 R32 WORK</td>
<td>80 4,834</td>
</tr>
<tr>
<td>5 R56 FINALLY</td>
<td>1,891 + 20</td>
</tr>
<tr>
<td>55 R3 SOME</td>
<td>15,207 + 60</td>
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<tr>
<td></td>
<td>53,875 + 70</td>
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<td>16,327 + 40</td>
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### Answers J–R:

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<th>Exercise</th>
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<td>409 R23 TO</td>
<td>B</td>
</tr>
<tr>
<td>93 R3 TIME</td>
<td>C</td>
</tr>
<tr>
<td>65 ANY</td>
<td>D</td>
</tr>
<tr>
<td>94 R11 MOTHER</td>
<td>E</td>
</tr>
<tr>
<td>24 SHAMPOO</td>
<td>F</td>
</tr>
<tr>
<td>92 BECAUSE</td>
<td>G</td>
</tr>
<tr>
<td>27 LONGER</td>
<td>H</td>
</tr>
<tr>
<td>62 THAT</td>
<td>I</td>
</tr>
<tr>
<td>253 R27 COULDN'T</td>
<td>J</td>
</tr>
<tr>
<td>408 R7 IT</td>
<td>K</td>
</tr>
<tr>
<td>38 R60 CUT</td>
<td>L</td>
</tr>
<tr>
<td>768 R9 WASH</td>
<td>M</td>
</tr>
<tr>
<td>60 R34 HIS</td>
<td>N</td>
</tr>
</tbody>
</table>

- **Q**: A recycling center received 3,250 pounds of newspaper. It was tied in 50-pound bundles. How many bundles were there?

- **R**: Traveling at 40 miles per hour, a car uses 30 gallons of gas to travel 810 miles. What is the average number of miles per gallon?
How Do You Find a Missing Train?

Do each exercise and find your answer to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a @, shade in the box instead of writing a letter in it.

<table>
<thead>
<tr>
<th>Exercise</th>
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<th>Divisor</th>
<th>Quotient</th>
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<tr>
<td>20</td>
<td>17229</td>
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</tr>
</tbody>
</table>

Eric took 144 pictures while on a 5-day camping trip. He used film with 36 pictures on each roll. How many rolls of film did he use?

Hilary is cutting strips of crepe paper to decorate for a party. Each strip is 42 inches long. If she has 400 inches of crepe paper left on a roll, how many 42-inch strips can she cut?
The name of the FAVORITE CLASS AT CATERPILLAR SCHOOL is hidden in the rectangle above. To find it, do each exercise and locate your answers in the rectangle—Shade in each area containing a correct answer.

1. $28 \div 117$
2. $31 \div 236$
3. $66 \div 338$
4. $47 \div 466$
5. $94 \div 309$
6. $56 \div 486$
7. $72 \div 441$
8. $35 \div 164$
9. $89 \div 623$
10. $17 \div 91$
11. $63 \div 539$
12. $40 \div 136$

13. $493 \div 54$
14. $250 \div 97$
15. $160 \div 26$

Steve has 276 slides to store in carousels. Each carousel holds 75 slides.
A. How many carousels will be completely filled?
B. How many slides will be left for an unfilled carousel?
C. How many carousels will be needed altogether?

There will be 142 people at the Goldenglob wedding reception. There is room for 16 people at each table.
A. How many tables will be full?
B. How many people will be left for an additional table?
C. How many tables will be needed altogether?

Mr. Jolly is building a fence around his yard, a distance of 272 feet. Each roll of fencing is 50 feet long and costs $69.
A. How many rolls of fencing should Mr. Jolly buy?
B. How many rolls will be completely used?
C. How many feet of fencing will be used from the last roll?
What Is the Most Expensive Thing on Any Restaurant’s Menu?

You will divide by 67 in all of the exercises on this page. Use the table of multiples of 67 to help you. Do each exercise and find your answer at the bottom of the page. Write the letters next to the exercise in the two spaces above the answer.

<table>
<thead>
<tr>
<th></th>
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<td>335</td>
<td>402</td>
<td>469</td>
<td>536</td>
<td>603</td>
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</table>

**UR** 67/2432  **UP** 67/5056  **TY** 67/3292  **OT** 67/5550  **TW** 67/981

**CA** 67/6449  **SO** 67/3081  **FO** 67/5427  **EN** 67/258  **RR** 67/6054
A CRYPTIC MESSAGE is written in code at the bottom of the page. To decode:
Do each exercise below. Find your answer in the answer column and notice the symbol next to it. Each time this symbol appears in the code, write the letter of the exercise above it.

Mode Middle School spent $4,060 on new tables and $944 on new chairs. Each table cost $70. How many tables did the school buy?
What is a cow on sale?
To decode this conversation: Do each exercise below and find your answer in the appropriate answer column. Write the letter of the answer in each box containing the number of the exercise.

1. \(9,470 - 3,661\)
2. \(2,896 \times 6\)
3. \(67,000 - 25,933\)
4. \(938 \times 900\)
5. \(47 \div 245\)
6. \(83 \div 803\)
7. \(29 \div 133\)
8. \(364,038 + 487,167 + 25,995\)
9. \(80 \times 60 \times 40 \times 20\)
10. \((95 \times 1000) - (34 \times 100)\)
11. \(700 \div 42,000\)
12. \(52,230 \div 9\)
13. \(2,405 \div 65\)
14. \(6,317 \div 91\)
15. \(28,734 \div 33\)

In 1519 Ferdinand Magellan set sail with 5 ships on the first voyage around the world. There were 48 men for each ship when the voyage began, but 222 men and 4 ships were lost before it ended in 1522. How many men completed the voyage?

In 1961 Yuri Gagarin became the first man to orbit the earth. He traveled for 108 minutes at an average speed of 235 miles per minute. How many miles did he travel?
What Do You Call
A Frog That's Stuck in the Mud?

Solve each problem and find your answer at the bottom of the page. Cross out the letter above each correct answer. When you finish, the answer to the title question will remain.

1. The Flyck Theater has 38 rows of seats on the main floor. There are 26 seats in each row. How many seats are on the main floor altogether?

2. There are 234 seats in the balcony of the Flyck Theater. There are 13 rows with the same number of seats in each row. How many seats are in each row?

3. The chart shows the number of films of certain types shown at the Flyck Theater in the last 10 years. How many more comedies than action films were shown?

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>Comedy</td>
<td>244</td>
</tr>
<tr>
<td>Drama</td>
<td></td>
</tr>
<tr>
<td>Action</td>
<td>138</td>
</tr>
</tbody>
</table>

4. Last week the theater had a double feature. The first film lasted 119 minutes. The second film lasted 107 minutes. There was a 15-minute intermission between films. How long was the entire program?

5. A total of 2,694 adults and 980 children bought tickets at the Flyck Theater last week. Each adult ticket cost $6. How much was paid for the adult tickets altogether?

6. The manager of the Flyck Theater earned $29,640 last year. How much did he earn per week? (1 year = 52 weeks)

7. Film travels through a projector at a rate of 170 feet per minute. How many feet of film are in a motion picture that lasts 120 minutes?

8. One night, the Flyck gave a prize to every 25th person who bought a ticket. A total of 610 people bought tickets.
   A. How many prizes were given?
   B. How many people bought tickets after the last person who won a prize?

9. In a recent year there were 18,772 movie theaters in the United States. Of these, 15,837 were indoor theaters and the rest were drive-ins. How many drive-in theaters were there?

<table>
<thead>
<tr>
<th>R</th>
<th>M</th>
<th>U</th>
<th>A</th>
<th>D</th>
<th>N</th>
<th>H</th>
<th>I</th>
<th>O</th>
<th>N</th>
<th>T</th>
<th>P</th>
<th>E</th>
<th>P</th>
<th>R</th>
<th>Y</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>241 min</td>
<td>$18,264</td>
<td>$570</td>
<td>988</td>
<td>17,400</td>
<td>21</td>
<td>2,935</td>
<td>2,744</td>
<td>223</td>
<td>20,400</td>
<td>$566</td>
<td>10</td>
<td>938</td>
<td>$16,164</td>
<td>211 min</td>
<td>18</td>
</tr>
</tbody>
</table>
What Kind of Monkeys Like French Fries?

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

1. The County Fair was held for 9 days during August. A total of 26,010 people came to the fair. What was the average attendance per day?

2. The price of admission to the fair was $4 for adults and $1 for children. On opening day, 3,576 people attended the fair, including 1,830 children.
   A. How many adults attended the fair on opening day?
   B. How much was paid for admission that day altogether?

3. The fair director bought advertising in the local newspaper. He bought 10 half-page ads at $240 each and 3 full-page ads at $390 each. How much was paid for these ads altogether?

4. The high temperatures for each day of the fair, in degrees Fahrenheit, were as follows: 85, 78, 80, 87, 93, 90, 84, 87, 81. Find the average of all these temperatures.

5. Ramon worked selling refreshments at the fair. He worked 8 hours a day for 9 days and earned a total of $432. How much did Ramon earn per hour?

6. For lunch Jonathan ordered a cheeseburger for $2.45, French fries for 85¢, and a milkshake for $1.35. He paid with a $20 bill. How much change should he have received?

7. There was a Ferris wheel at the fair. Becky read that the original Ferris wheel was built in 1893 at the Midway, Chicago. The wheel was 250 feet in diameter and had 36 cars, each seating 60 people. How many people could ride at the same time?

8. Corrals were built for sheep brought to the fair. Each corral could hold 75 sheep, and there was space for 1,350 sheep altogether. How many corrals were built?

9. Mrs. Penner made a quilt to enter in a competition at the fair. First she made colorful squares, using 16 pieces of fabric for each square. Then she sewed the squares together. The quilt had 12 rows of squares with 8 squares in each row. How many pieces of fabric were used altogether?
What Did Emperor Klodius Numerus Say About His Ability With Roman Numerals?

Draw a straight line connecting each Roman numeral with its value. When you finish, you will notice that some areas inside the rectangle contain an "S," which stands for "shade." Shade in all of these areas. The answer to the title question will appear.
Write the base ten numeral for each base two numeral below. Find your answers to the left. Start with the first answer. Connect the dots by the answers, in order. It's a crackup!

1. $101_{\text{two}}$
2. $110_{\text{two}}$
3. $10_{\text{two}}$
4. $111_{\text{two}}$
5. $1010_{\text{two}}$
6. $1100_{\text{two}}$
7. $1011_{\text{two}}$
8. $1000_{\text{two}}$
9. $1101_{\text{two}}$
10. $1111_{\text{two}}$
11. $10100_{\text{two}}$
12. $10111_{\text{two}}$
13. $11001_{\text{two}}$
14. $11100_{\text{two}}$
15. $11010_{\text{two}}$
16. $10000_{\text{two}}$
17. $10011_{\text{two}}$
18. $11111_{\text{two}}$
19. $100000_{\text{two}}$
20. $100010_{\text{two}}$
21. $111001_{\text{two}}$
22. $110100_{\text{two}}$
23. $101011_{\text{two}}$
24. $111111_{\text{two}}$
25. $101_{\text{two}}$
26. $10101_{\text{two}}$
27. $1001_{\text{two}}$
28. $1_{\text{two}}$
How many triangles can you count in this figure?

One hundred automobiles were lined up bumper-to-bumper. How many bumpers were actually touching each other?

Fill in the circles with the numbers 1, 2, 3, 4, and 5 so that no matter which line is added, the sum of the four numbers will be 12.

A baseball team played 150 games. It won 30 more games than it lost. How many games did the team lose?

A pogo stick cost $30. A scooter cost $40 more than the pogo stick. A bicycle cost $50 more than the scooter. What was the total cost of all three?

In the following subtraction problem, the letters A, B, and C stand for three different digits. What digit should replace each letter?

Four trees lived in a row in Happy Forest. They were red, green, yellow, and blue. The red tree was not next to the green tree. The blue tree was to the right of the green tree. The yellow tree was first. In what order were the trees lined up?

The toothpicks in the drawing have been arranged to form six squares. Which five toothpicks can be removed to leave only three squares?

You have 10 dollars. If you give away all but 3 dollars, how many dollars do you have left?

**SCORING KEY**

8 or 9 — Superstar Genius
6 or 7 — Star Genius
4 or 5 — Genius
3 or less — Genius of the Future
NOTE: You may also want to ask students to write the correct answer for each incorrect statement.

**Get the Message**

Each row contains two correct and two incorrect statements. Circle the word above each correct statement. When you finish, read the circled words and you will get the message!

<table>
<thead>
<tr>
<th>DID</th>
<th>SOMEONE</th>
<th>FINALLY</th>
<th>HAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(5 x 6) + 4 = 32</td>
<td>(3 x 8) + 7 = 31</td>
<td>(4 x 4) + 2 = 14</td>
<td>(9 x 8) + 9 = 62</td>
</tr>
<tr>
<td>HIT</td>
<td>WROTE</td>
<td>BOOKS</td>
<td>A</td>
</tr>
<tr>
<td>(8 x 6) + 5 = 49</td>
<td>(7 x 5) + 6 = 41</td>
<td>(4 x 7) + 8 = 22</td>
<td>(9 x 3) + 3 = 24</td>
</tr>
<tr>
<td>BOOK</td>
<td>REPORT</td>
<td>ABOUT</td>
<td>THAT</td>
</tr>
<tr>
<td>(8 x 6) + 9 = 45</td>
<td>(3 x 6) + 5 = 21</td>
<td>(8 x 5) + 5 = 37</td>
<td>(2 x 8) + 6 = 14</td>
</tr>
<tr>
<td>EXPLAINS</td>
<td>HAS</td>
<td>HOW</td>
<td>WHY</td>
</tr>
<tr>
<td>(5 x 1) + 6 = 13</td>
<td>(7 x 8) + 6 = 61</td>
<td>(6 x 7) + 9 = 33</td>
<td>(8 x 9) + 3 = 74</td>
</tr>
<tr>
<td>SOME</td>
<td>PEOPLE</td>
<td>TO</td>
<td>FIT</td>
</tr>
<tr>
<td>(5 x 5) + 1 = 28</td>
<td>(3 x 7) + 5 = 24</td>
<td>(4 x 6) + 7 = 25</td>
<td>(9 x 7) + 4 = 59</td>
</tr>
<tr>
<td>BROKEN</td>
<td>LOCKS</td>
<td>WHEN</td>
<td>ANS</td>
</tr>
<tr>
<td>(7 x 7) + 3 = 54</td>
<td>(6 x 9) + 6 = 60</td>
<td>(5 x 9) + 8 = 39</td>
<td>(8 x 8) + 2 = 62</td>
</tr>
<tr>
<td>OTHER</td>
<td>SHIT</td>
<td>VERY</td>
<td></td>
</tr>
<tr>
<td>(9 x 3) + 7 = 11</td>
<td>(9 x 4) + 9 = 45</td>
<td>(5 x 7) + 6 = 29</td>
<td>(4 x 6) + 4 = 26</td>
</tr>
<tr>
<td>ABOUT</td>
<td>ONE</td>
<td>GOOD</td>
<td>TIME</td>
</tr>
<tr>
<td>(2 x 5) + 3 = 13</td>
<td>(9 x 9) + 8 = 86</td>
<td>(7 x 6) + 7 = 37</td>
<td>(3 x 4) + 1 = 11</td>
</tr>
</tbody>
</table>

**CRYPTIC QUIZ**

1. Where do Martians leave their spaceships?
2. Where do Cheerios go every day at noon?

**AT PARKING METEORS**

**OAT TO LUNCH**

TO DECODE THE ANSWERS TO THESE QUESTIONS:

Find the answer to each exercise in the code. Each time the answer appears, write the letter of that exercise above it.

**Answers**

- **G**: (3 x 4) + (2 x 5) + (6 x 2) = \[34\]
- **U**: (8 x 3) + (5 x 9) + (4 x 4) = [85]
- **E**: (9 x 8) + (2 x 7) + (6 x 5) = \[116\]
- **C**: (3 x 9) + (7 x 7) + (4 x 6) = \[100\]
- **I**: (9 x 9) + (8 x 4) + (5 x 7) = \[121\]
- **A**: (3 x 7) + (7 x 6) + (9 x 9) = \[144\]
- **S**: (8 x 7) + (5 x 4) + (6 x 8) = \[124\]
- **H**: An auto mechanic bought 6 screws at \$2 each! He also bought 4 wrenches at \$9 each. What was the total cost? \[84\]
- **K**: (9 x 7) + (8 x 8) + (3 x 5) = \[142\]
- **O**: (6 x 3) + (7 x 4) + (5 x 8) = \[86\]
- **M**: (9 x 4) + (8 x 8) + (3 x 3) = \[93\]
- **L**: (6 x 6) + (8 x 9) + (7 x 3) = \[129\]
- **P**: (4 x 8) + (7 x 9) + (9 x 5) = \[140\]
- **N**: (7 x 8) + (5 x 5) + (6 x 9) = \[135\]
- **R**: (3 x 6) + (8 x 5) + (7 x 7) = \[107\]

In a 2-week period, the mechanic worked 8 hours a day for 7 days and 5 hours a day for 3 days. How many hours did he work altogether? \[71\]
### What Can You Say About Flat Bicycle Tires?

Find the answer to each exercise in the list of answers under the exercise. Cross out the letter above each answer. When you finish, the answer to the title question will remain.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
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<td>4</td>
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<td>7</td>
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<td>8</td>
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<tr>
<td>9</td>
<td>I</td>
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<tr>
<td>10</td>
<td>J</td>
</tr>
</tbody>
</table>

### Why Was Elmo's Report Called All Wet?

Find the answer to each exercise in the appropriate set of answers and notice the letter next to it. Write this letter in the box containing the number of the exercise.

<table>
<thead>
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<th>Exercise</th>
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<td>10</td>
<td>J</td>
</tr>
</tbody>
</table>

### Why Did the Writer Move From the Third Floor to the Fifth?

Do each exercise below and find your answer in the Code Key. Notice the letter above it. Write this letter in the box at the bottom of the page containing the number of the exercise.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Code</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>2</td>
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<tr>
<td>3</td>
<td>C</td>
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<tr>
<td>4</td>
<td>D</td>
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<td>5</td>
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<td>9</td>
</tr>
<tr>
<td>10</td>
<td>J</td>
<td>0</td>
</tr>
</tbody>
</table>

### How Do You Weigh A Whale?

Do each exercise and find your answer at the bottom of the page. Write the letter of the exercise in the box containing the answer.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Answer</th>
</tr>
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<tr>
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<tr>
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<td>B</td>
<td>2</td>
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<td>3</td>
<td>C</td>
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<td>8</td>
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<td>9</td>
<td>I</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>J</td>
<td>0</td>
</tr>
</tbody>
</table>
What Do You Call a Popular Perfume?

Solve each problem and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

1. Larry bought 7 medium pizzas from Pizza Heaven.
   a. How many pieces did he get?
   b. What was the total cost?
2. Sherry bought 2 small and 1 medium pizza.
   a. How many pieces did she get?
   b. What was the total cost?
3. Mary bought 20 small and 10 large pizzas.
   a. How many pieces did she get?
   b. What was the total cost?
4. Barry bought 6 small pizzas for a group of 8 people.
   a. How many pieces did she get?
   b. If divided equally, how many pieces will each person get?
5. Jerry bought 5 medium and 3 large pizzas for a group of 9 people.
   a. How many pieces did he get?
   b. If divided equally, how many pieces will each person get?
6. Gary bought 6 small and 1 medium pizza for a group of 8 people.
   a. How many pieces did he get?
   b. If the cost is divided equally, how much will each person pay?

<table>
<thead>
<tr>
<th>Size</th>
<th>Number of Pizzas</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>small</td>
<td>4</td>
<td>$5</td>
</tr>
<tr>
<td>medium</td>
<td>6</td>
<td>$7</td>
</tr>
<tr>
<td>large</td>
<td>8</td>
<td>$9</td>
</tr>
</tbody>
</table>

Why Is It Dangerous to Do Math in the Jungle?

Mark each box containing a number that does not belong in that row. Then write the letters from these boxes on the lines at the right.

- Multiples of 2
- Multiples of 3
- Multiples of 5
- Multiples of 6
- Multiples of 7
- Multiples of 8
- Multiples of 10
- Multiples of 12

When Is a Lady Not a Lady?

Do each exercise and find your answer in the set of answers to the right. Write the letter of the answer in the box containing the number of the exercise.

A blue whale could weigh more than 294,350 pounds.

- Write the number in standard form.

The number of species of beetles is more than 216,750.

- Write the number in standard form.

When Is She Returning to the Store?

Mark each box containing a number that does not belong in that row. Then write the letters from these boxes on the lines at the right.

- Multiples of 2
- Multiples of 3
- Multiples of 5
- Multiples of 6
- Multiples of 7
- Multiples of 8
- Multiples of 10
- Multiples of 12

When Did She Get New Shoes?

Mark each box containing a number that does not belong in that row. Then write the letters from these boxes on the lines at the right.

- Multiples of 2
- Multiples of 3
- Multiples of 5
- Multiples of 6
- Multiples of 7
- Multiples of 8
- Multiples of 10
- Multiples of 12

ANSWERS
Why Are Unbrushed Teeth Like a Polaroid® Camera?

Do each exercise and find your answer in the set of answers to the right. Write the letter of the answer in the box containing the number of the exercise.

The area of the United States is 3,618,465 square miles.

Give the digit in each place named.

- tens' place
- ten thousand's place
- thousands' place
- millions' place

The earth travels around the sun in 31,556,926 seconds.

Give the digit in each place named.

- tens' place
- ten thousand's place
- millions' place
- ten millions' place

The speed of light is 670,614,120 miles per hour.

Give the digit in each place named.

- ones' place
- thousands' place
- millions' place
- ten millions' place

Write the number in standard form.

Write the number in standard form.

Why Are Unbrushed Teeth Like a Polaroid® Camera?

Why Are Unbrushed Teeth Like a Polaroid® Camera?

Why Are Unbrushed Teeth Like a Polaroid® Camera?
TOPIC 2.1: Rounding: Nearest 10, 100, 1,000, or 10,000

Dentists Hate It!

Do the exercises below and find your answers in the rectangle. Shade in each area containing a correct answer. You will discover what dentists hate!

Why Do You Get a Wig From the Acme Wig Company So Quickly?

For each exercise, write the missing number in the blank. Then select the property illustrated. Circle the letter in the appropriate column next to the sentence. At the bottom of the page, find the box containing the number you wrote in the blank. Write the letter you circled in this box.

TOPIC 3a: Basic Properties/Addition

What Do You Get When You...

1. Cross a rabbit with a lawn sprinkler?
   H A R E S P R A Y
   A-24

2. Cross a kitten with a fax machine?
   A C O P Y C A T

3. Cross two turkeys with a coal production company?
   M I N E R B I R D S
   A-26

To decode the answers to these three questions:
Do each exercise below and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

What is the combined area of all five lakes in the Great Lakes?

Use the table at the right for the next three questions.

(A) What is the combined area of the five lakes in the Great Lakes?

(B) What is the combined area of all five lakes?

(C) What is the combined area of all five lakes?
What Do You Get When You Phone a Bee?

Do each exercise and find your answer in the rectangle below. Cross out the box that contains your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

1. 3817 + 2 785
2. 6783 + 3 388
3. 2956 + 4 5614
4. 9427 + 4 9427
5. 10033 + 3 10033
6. 1327 + 1 1327
7. 4828 + 4 4828
8. 6277 + 6 6277
9. 5039 + 7 5039
10. 4792

Why Don’t Many Barbers Join the Army?

Evaluate each sum or difference. Circle the letter of the better choice. Write this letter in the box containing the number of the exercise.

1. 83 + 39
2. 74 + 57
3. 91 + 62
4. 47 + 252
5. 78 + 19
6. 517 + 184
7. 525 – 306
8. 490 – 721
9. 288 – 4109
10. 336 + 980 + 127
11. 8195 + 7606
12. 9120 – 5799
13. 45307 + 1853
14. 29747 + 6838
15. 3710 + 8286 + 5235
16. 5744 + 915
17. 18585 + 963
18. 1918 + 2205 + 467
19. Valley Video owns 1,714 video tapes. Of these, 288 are rented out. About how many are not rented out? Change should you get from a $50 bill?
20. Dinner costs $29.35. Tax and tip together add $6.85. About how much change should you get from a $50 bill?

Do not hallucinate.
What Kind of Birds Jump Out of Airplanes?

Solve each problem below and find your solution in the answer column. Write the letter of the answer in each box containing the number of the problem.

1. Kent weighs 139 pounds and his bicycle weighs 31 pounds. Jill weighs 106 pounds and her bicycle weighs 28 pounds. How much greater is the combined weight of Kent and his bicycle than the combined weight of Jill and her bicycle?

2. Janet and Andy bowled three games. Janet's scores were 113, 96, and 145. Andy's scores were 127, 74, and 88. How much greater was Janet's total score for the three games than Andy's total score?

3. In the three events of a weightlifting competition, Paul had lifts of 216, 344, and 243 pounds. Stan had lifts of 216, 344, and 243 pounds. How much greater was the combined total of Stan's three lifts than the total of Paul's three lifts?

4. In his first year on the football team, Bill rushed with the ball 314 yards. In his second year, his rushing total was 68 fewer yards than the first year. In his third year, it was 127 yards more than the second year. How many yards did Bill rush in the third year?

5. In the three events of a weightlifting competition, Paul had lifts of 216, 344, and 243 pounds. Stan had lifts of 216, 344, and 243 pounds. How much greater was Stan's total score than Paul's total score?

6. Amy is training to run a marathon. During her five workouts last week, she ran distances of 18 miles, 15 miles, 12 miles, 17 miles, and 20 miles. How much greater is the combined total of Amy's five workouts than the marathon distance of 26 miles?

7. Sue has shotocome some new equipment to box. The skis cost $126. the pole cost $35, the boots cost $150. How much money will Sue save by buying the package deal?

8. Solve each problem below and find your solution in the answer column. Write the letter of each exercise in the box containing its answer.

Why Is The Library Not Adding Any More Fairy Tales?

For each exercise, write the missing number in the blank. Then select the property illustrated. CIRCLE the letter in the appropriate column next to the sentence.

At the bottom of the page, find the box containing the number you wrote in the blank. Write the letter you circled in this box.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Number</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5x1 = 5</td>
<td>L</td>
</tr>
<tr>
<td>2</td>
<td>12 x 1 = 12</td>
<td>T</td>
</tr>
<tr>
<td>3</td>
<td>4 x 9 = 36</td>
<td>D</td>
</tr>
<tr>
<td>4</td>
<td>30 x 50 = 30</td>
<td>P</td>
</tr>
<tr>
<td>5</td>
<td>8 x 0 = 0</td>
<td>A</td>
</tr>
<tr>
<td>6</td>
<td>(2 x 3) x 7 = 2 x (3 x 7)</td>
<td>C</td>
</tr>
<tr>
<td>7</td>
<td>(9 x 8) x 9 = (9 x 36)</td>
<td>E</td>
</tr>
<tr>
<td>8</td>
<td>(43 x 21) x 37 = 43 x (21 x 37)</td>
<td>N</td>
</tr>
<tr>
<td>9</td>
<td>35 x 45 = 45 x 35</td>
<td>I</td>
</tr>
<tr>
<td>10</td>
<td>6 x 6 = 6 x 6</td>
<td>L</td>
</tr>
<tr>
<td>11</td>
<td>77 x 1 = 77</td>
<td>N</td>
</tr>
<tr>
<td>12</td>
<td>5 x 40 = 30 x 9</td>
<td>T</td>
</tr>
<tr>
<td>13</td>
<td>61 x 38 = 59 x 38</td>
<td>A</td>
</tr>
<tr>
<td>14</td>
<td>37 x 3 x 15 = 87 x 15</td>
<td>C</td>
</tr>
<tr>
<td>15</td>
<td>900 x 44 = 34 x 900</td>
<td>F</td>
</tr>
<tr>
<td>16</td>
<td>161 x 1 = 161</td>
<td>I</td>
</tr>
<tr>
<td>17</td>
<td>32 x 5 x 89 = 22 x (1 x 9)</td>
<td>L</td>
</tr>
<tr>
<td>18</td>
<td>75 + (8 x 0) = 75 + 0</td>
<td>N</td>
</tr>
</tbody>
</table>

IT RAN OUT OF ELF SPACE

Why Did Ms. Snorg Throw Vegetables in the Air?

Follow the directions given for each section. Write the letter of each exercise in the box containing the number you wrote in the blank. The first exercise is done as an example.

I. Use mental math to find the product. Under each exercise, write the missing number in the blank. Then select the property multiplied. The first exercise is done as an example.

II. Use mental math to find the product. Under each exercise, write the missing number in the blank. Then select the property used.

What's The Title of This Picture?

Draw the correct answer box around the picture. The circled number and letter are the coded answer.

ANSWERS
Mysteries of Love

What did the boy candle say to the girl candle?

DO YOU CARROT?

What did the boy rabbit say to the girl rabbit?

ALL FOR ME?

Moving Words

3 x 6 = 72
8 x 5 = 40
6 x 7 = 42
3 x 9 = 27
4 x 4 = 16
5 x 6 = 30
6 x 8 = 48
7 x 9 = 63
8 x 10 = 80
9 x 11 = 99
3 x 10 = 30
4 x 11 = 44
5 x 12 = 60
6 x 12 = 72
7 x 10 = 70
8 x 10 = 80
9 x 12 = 108
10 x 10 = 100
11 x 11 = 121
12 x 12 = 144

WHILE
ALWAYS
BECAUSE
STANDING
WILL
CAN

You
Will
Never
Starve
While

84
256
422
194
72

IN
KNEES

STANDING
BECAUSE
DOWN

105
384
163
748

504
400
336

19.84 + 751
20.396 x 469
21.97 x 903
22.78 + 72
23.3 x 292,650
24. An XYZ machine weighs 81 kg and costs $26,750. About how much would a shipment of 36 XYZ machines cost?

You Call a Car Selling at Half Price?

Multiply mentally, write your answer, and then mark it in the answer columns. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

1. 70 x 100
   Answers: 70 7,000
   700 700,000
   7,000 70,000
   70,000 7,000,000

2. 100 x 20
   Answers: 2,000
   20,000
   600
   60,000

3. 40 x 90
   Answers: 3,600
   360
   360
   36

4. 30 x 8
   Answers: 240
   240
   960
   96

5. 50 x 60
   Answers: 3,000
   3,000
   3,000
   3,000

6. 3.2 x 8
   Answers: 25.6
   29.8
   32.7
   36.8

7. 1.71 x 8
   Answers: 13.68
   14.48
   15.28
   16.08

8. 13.406 x 892
   Answers: 11,924
   12,470
   13,016
   13,562

Why Do They Call the New Hair Dryer "Volcano"?

Estimate these products. Round each factor to its greatest place, then multiply the rounded factors. Find your estimates in the lists directly under the exercises. Write the letter of the answer in the box containing the number of the exercise. If the answer has a $, place the dollar sign in the box instead of writing a letter in it.

1. 13.406 x 892
   Answers: 11,924
   12,470
   13,016
   13,562

2. 8.77 x 22
   Answers: 190.94
   196.14
   201.34
   206.54

3. 9.45 x 59
   Answers: 557.55
   562.75
   568.95
   574.15

4. 15.28 x 34
   Answers: 519.52
   524.72
   529.92
   535.12

5. 17.6 x 1,758
   Answers: 31,128
   31,528
   31,928
   32,328

6. A new car has 94 passengers. How many people can ride on 8 buses?
   Answers: 752
   758
   764
   770

7. 20.396 x 469
   Answers: 9,546
   9,646
   9,746
   9,846

8. 22.78 + 72
   Answers: 125
   126
   127
   128

9. 23.3 x 292,650
   Answers: 6,845
   6,945
   7,045
   7,145

10. An ABC machine weighs 320 kg and costs $4,250. About how much would a shipment of 36 ABC machines cost?
    Answers: $153,000
    $154,000
    $155,000
    $156,000

11. 27.84 + 72
    Answers: 1256
    1262
    1268
    1274

12. A theater has 81 rows with 39 seats in each row. About how many seats are in the theater?
    Answers: 1,271
    1,272
    1,273
    1,274

13. 19.84 + 751
    Answers: 27.35
    27.45
    27.55
    27.65

14. 20.396 x 469
    Answers: 9,546
    9,646
    9,746
    9,846

15. 22.78 + 72
    Answers: 125
    126
    127
    128

16. 23.3 x 292,650
    Answers: 6,845
    6,945
    7,045
    7,145

17. 11.7 x 1,758
    Answers: 20,397
    20,497
    20,597
    20,697

18. An ABC machine weighs 320 kg and costs $4,250. About how much would a shipment of 36 ABC machines cost?
    Answers: $153,000
    $154,000
    $155,000
    $156,000

19. 18.45 + 751
    Answers: 27.30
    27.40
    27.50
    27.60

20. 11.7 x 1,758
    Answers: 20,397
    20,497
    20,597
    20,697

21. 9.45 x 59
    Answers: 557.55
    562.75
    568.95
    574.15

22. 8.77 x 22
    Answers: 190.94
    196.14
    201.34
    206.54

23. 22.78 + 72
    Answers: 125
    126
    127
    128

24. An XYZ machine weighs 81 kg and costs $26,750. About how much would a shipment of 36 XYZ machines cost?
MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK A

Creative Publications

What Kind of Car Makes the Line
In the Middle of the Road Disappear?

Solve each problem and find your answer at the bottom of the page. Cross out the letter above each correct answer. When you finish, the answer to the title question will remain—something you “saw” it know!

1. Lincoln Middle School bought one Pro 35-A camera and three Instamatic cameras from Click Photo Supply. What was the total cost of this equipment? $887

2. Tim bought a Pro 35-A camera, a flash attachment, and a 28 mm lens. Joe bought an Instamatic camera and a tripod.
   A. How much did Tim’s equipment cost? $67
   B. How much did Joe’s equipment cost? $151
   C. How much greater was the cost of Tim’s equipment than Joe’s equipment? $52

3. Film is sold to Click Photo Supply with 6 rolls in a pack. There are 24 packs in a case. How many rolls of film are in 5 cases? 720

4. Jessica shot 7 rolls of film with 24 pictures on each roll and 2 rolls with 56 pictures on each roll. How many pictures did Jessica take altogether? 260

5. Jill shot 9 rolls of film with 36 pictures on each roll. Of these, 157 pictures were taken outdoors. How many pictures were taken indoors? 423

6. Mankind is a sports photographer for the school yearbook. During the year, he took 277 pictures at football games, 382 pictures at basketball games, and 450 pictures at other sports events. Of these, 58 were actually printed in the yearbook.
   A. How many sports pictures did Mankind take altogether? 937
   B. How many of Mankind’s pictures were not printed in the yearbook? 399

7. Bill’s photo album has 36 pages with 8 pictures on each page and 35 pages with 4 pictures on each page. How many pages are in Bill’s album? 412

8. Mary’s photo album has 18 pages with 6 pictures on each page, 34 pages with 4 pictures on each page, and 10 pages with 1 picture on each page. How many pictures are in Mary’s album? 254

9. Tom has a photo album with 80 pages. There are 46 pages with 5 pictures on each page. All the other pages have 4 pictures on each page. How many pictures are in Tom’s album? 336

What is the Title of This Picture?

Do each exercise and find your answer in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

1. Prizewinning dog:
   A. 34
   B. 91
   C. 197
   D. 226
   E. 231
   F. 307
   G. 312
   H. 324

2. Pick for mountain climbers:
   A. 35
   B. 47
   C. 113
   D. 127
   E. 194
   F. 242
   G. 251
   H. 336

3. Pick for long distance runs:
   A. 17
   B. 25
   C. 49
   D. 51
   E. 53
   F. 131
   G. 157
   H. 184

4. Pick for basketball teams:
   A. 15
   B. 33
   C. 54
   D. 78
   E. 88
   F. 116
   G. 135
   H. 162

5. Pick for baseball teams:
   A. 21
   B. 45
   C. 69
   D. 93
   E. 117
   F. 141
   G. 165
   H. 189

6. Pick for football teams:
   A. 28
   B. 52
   C. 76
   D. 98
   E. 122
   F. 146
   G. 170
   H. 194

7. Pick for track teams:
   A. 11
   B. 33
   C. 55
   D. 77
   E. 99
   F. 121
   G. 143
   H. 165

8. Pick for gymnastics teams:
   A. 24
   B. 48
   C. 72
   D. 96
   E. 120
   F. 144
   G. 168
   H. 192

9. Pick for cheerleading teams:
   A. 13
   B. 39
   C. 65
   D. 91
   E. 117
   F. 143
   G. 169
   H. 195

10. Pick for tennis teams:
    A. 14
    B. 38
    C. 62
    D. 86
    E. 110
    F. 134
    G. 158
    H. 182


ANSWERS

MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK A
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What is the Title of This Picture?

Do each exercise and find your answer in the appropriate answer column. Notice the word under the answer. Write this word in the box containing the letter of the exercise.

1. Prizewinning dog:
   A. ATOMIC
   B. BEEF
   C. BULLDOG
   D. CUPCAKE
   E. DOG
   F. EARTHCAKE
   G. EGG
   H. FALL

2. Pick for mountain climbers:
   A.ibal
   B. JACQUARD
   C. JUNGLE
   D. LIMAX
   E. MAX
   F. MESA
   G. MOUNTAIN
   H. NATURE

3. Pick for long distance runs:
   A. BALANCE
   B. BAND
   C. BIRD
   D. BODY
   E. CAGE
   F. DOG
   G. DRUM
   H. EAGLE

4. Pick for basketball teams:
   A. CAT
   B. DOG
   C. EAGLE
   D. FALCON
   E. HAWK
   F. JAGUAR
   G. LEOPARD
   H. EAGLE

5. Pick for baseball teams:
   A. BULL
   B. CAT
   C. DOG
   D. EAGLE
   E. FALCON
   F. JAGUAR
   G. LEOPARD
   H. EAGLE

6. Pick for football teams:
   A. BEAR
   B. CAT
   C. DOG
   D. EAGLE
   E. FALCON
   F. JAGUAR
   G. LEOPARD
   H. EAGLE

7. Pick for gymnastics teams:
   A. BALANCE
   B. BEAR
   C. CAT
   D. DOG
   E. EAGLE
   F. FALCON
   G. JAGUAR
   H. LEOPARD

8. Pick for cheerleading teams:
   A. CAT
   B. BEAR
   C. DOG
   D. EAGLE
   E. FALCON
   F. JAGUAR
   G. LEOPARD
   H. EAGLE

9. Pick for tennis teams:
   A. BALANCE
   B. BEAR
   C. CAT
   D. DOG
   E. EAGLE
   F. FALCON
   G. JAGUAR
   H. LEOPARD

10. Pick for track teams:
    A. BALANCE
    B. BEAR
    C. CAT
    D. DOG
    E. EAGLE
    F. FALCON
    G. JAGUAR
    H. LEOPARD


ANSWERS
Why Did the Cow Jump Up and Down?

Do each exercise and find your answer to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a grade, shade it in the box instead of writing a letter in it.


draw a straight line connecting the square letter in the matching numbered box at the bottom of the page.

to the square by its answer. The line will cross a number and a letter. Write the

to the right. Write the letter of the exercise above it.

Animal Cracks

1. What animal is black, white, and green?

2. How can you tell the price of a pelican?

BOOKS NEVER WRITTEN

The Great Diamond Robbery

Tricky Riff Shooting

A television show was produced for 3 years. Each year, 26 episodes were filmed. Each episode ran 47 minutes. How long did it take to watch all the episodes of that TV show?

Bizarre Middle School bought 15 computers and 6 printers. Each computer cost $790 and each printer cost $450. What was the total cost of the new equipment?
How Do Clocks Communicate?

Do each exercise below. Find your answer in the answer column and notice the letter next to it. Look for this letter in the string of letters near the bottom of the page and CROSS IT OUT each time it appears. When you finish, write the remaining letters in the rectangle at the bottom of the page.

1. 7:14 2. 649 3. 845 4. 690 5. 567 6. 907

NOTE: Exercise 9 gives the number of seconds in a day.

How Did Captain Hook Get Injured?

Do each exercise and find your answer in the set of answers to its right. Write the letter of the exercise in the box containing the number of the answer.

I. Write using an exponent:
   \[ a^2 \times a^3 \times a \]

II. Write the product:
   \[ a^2 	imes b^3 \]

III. Write as a power of 10:
   \[ 1,000,000,000 \]

IV. Solve the equation:
   \[ 4 \times 10^2 + x = 600 \]

When Do Stores Sell Most of Their Tanning Oil?

Decide whether you would choose mental math, estimation, or a tool (paper and pencil or calculator) to solve each problem. CIRCLE the letter in the appropriate column next to the problem. Then solve the problem. Find the answer at the bottom of the page and write the letter you circled under it.

Choose: M - mental math, E - estimation, or T - tool

1. Prime Jr. High has 41 classrooms. Each classroom has 30 seats. About how many desks are in the school altogether?
   M

2. Prime Jr. High buys pencils to sell at the school store. There are 144 pencils in a box, and there are 20 boxes in a case. How many pencils are in 3 cases?
   E

3. The school bought 40 new electronic typewriters for its typing class. Each typewriter costs $300. What was the total cost of the typewriters?
   T

4. The PTA at Prime Jr. High sponsored a book sale. A book company bought 2,837 paperback books and 694 hardcover books. 1,472 books were sold, how many books were not sold?
   M

5. This year 688 people came to the Halloween Carnival. They bought an average of 2.5 game tokens each. About how many tickets were sold altogether?
   T

6. Prime Jr. High had a campaign to raise $10,000 for new computers. A local business contributed $3,000. The PTA raised $2,000 from parents and students. How much more money must be raised to reach the goal of $10,000?
   E

7. Each day, Michelle attends 7 different classes. Each class is 50 minutes long. She also has a 10-minute homeroom class. How many minutes does Michelle spend in class each day?
   T

8. The students at Prime Jr. High use an average of 6 different textbooks. If there are 914 students at the school, about how many textbooks are being used altogether?
   M

9. Last year, Scott went to school 6 hours a day for 180 days. He also watched an average of 23 hours of TV each week for 52 weeks. How many more hours did Scott spend watching TV than going to school?
   E

- Answers
What Can We Learn From A Centipede?

1. Round the divisor to its greatest place.
2. Change the dividend to a number easy to divide by the rounded divisor.
3. Divide to estimate the quotient.

Use the procedure above to rewrite each exercise and estimate the quotient. Find your estimated bottom of the page. Write the letter of the exercise in the box containing the number of the answer.

1. 2,341 ÷ 79
   A. 30
   B. 31
   C. 32
   D. 33
   E. 34

2. 4,140 ÷ 90
   A. 40
   B. 41
   C. 42
   D. 43
   E. 44

3. 6,400 ÷ 80
   A. 80
   B. 81
   C. 82
   D. 83
   E. 84

4. 10,935 ÷ 36
   A. 300
   B. 301
   C. 302
   D. 303
   E. 304

5. While running for office, Trix Smile shook 3,500 babies. If his campaign lasted 80 days, estimate the average number of babies he shook each day.

Kathy earns $26,100 per year as a designer. About how much does Kathy earn per week? (1 year = 52 weeks)

It is 318 miles from Los Angeles to Yosemite National Park. At an average speed of 41 miles per hour, about how many hours does it take to drive this distance?

There are 12 inches in a foot. How many feet are in 1 inch?

What Tool Did the Brontosaurus Use to Build His House?

Divide mentally, write your answer, and then mark it in the answer column. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

1. 60 + 30
   A. 90
   B. 91
   C. 92
   D. 93
   E. 94

2. 5 + 400
   A. 500
   B. 501
   C. 502
   D. 503
   E. 504

3. 2,000 + 400
   A. 2,400
   B. 2,401
   C. 2,402
   D. 2,403
   E. 2,404

4. 400 + 800
   A. 800
   B. 801
   C. 802
   D. 803
   E. 804

5. 4,000 + 800
   A. 4,800
   B. 4,801
   C. 4,802
   D. 4,803
   E. 4,804

6. 20 + 70
   A. 90
   B. 91
   C. 92
   D. 93
   E. 94

7. 30 + 60
   A. 90
   B. 91
   C. 92
   D. 93
   E. 94

8. 300 + 600
   A. 900
   B. 901
   C. 902
   D. 903
   E. 904

Why Does It Take a Baseball Player So Long To Run From Second Base to Third Base?

Do each exercise and find your answer in the appropriate answer column. Write the letter of the exercise in the box containing the number of the answer.

1. 620
   A. 620
   B. 621
   C. 622
   D. 623
   E. 624

2. 279
   A. 279
   B. 280
   C. 281
   D. 282
   E. 283

3. 479
   A. 479
   B. 480
   C. 481
   D. 482
   E. 483

4. 320
   A. 320
   B. 321
   C. 322
   D. 323
   E. 324

5. 450
   A. 450
   B. 451
   C. 452
   D. 453
   E. 454

6. 3500
   A. 3500
   B. 3501
   C. 3502
   D. 3503
   E. 3504

7. 4000
   A. 4000
   B. 4001
   C. 4002
   D. 4003
   E. 4004

8. 5000
   A. 5000
   B. 5001
   C. 5002
   D. 5003
   E. 5004

There is a shortstop in the middle!

Why Did Workers at the Raisin Factory Want to Keep Some Raisins for Themselves?

Choose the best replacement for the dividend so that a basic fact can be used to estimate the quotient. Then write the estimate. Write the letter of your replacement in the box above the quotient. Then write the estimate. Write the letter of the exercise in the box containing the number of the answer.

1. 429 + 7
   A. 400
   B. 420
   C. 430
   D. 440
   E. 450

2. 1235 + 400
   A. 1600
   B. 1800
   C. 2000
   D. 2200
   E. 2400

3. 45,500 + 6,700
   A. 52,200
   B. 53,200
   C. 54,200
   D. 55,200
   E. 56,200

4. 6200 + 8000
   A. 10,000
   B. 12,000
   C. 14,000
   D. 16,000
   E. 18,000

5. 3,504 + 70
   A. 3,580
   B. 3,590
   C. 3,600
   D. 3,610
   E. 3,620

6. 4000 + 8000
   A. 12,000
   B. 14,000
   C. 16,000
   D. 18,000
   E. 20,000

7. 2300 + 4000
   A. 6300
   B. 6400
   C. 6500
   D. 6600
   E. 6700

8. 3000 + 5000
   A. 8000
   B. 8100
   C. 8200
   D. 8300
   E. 8400

They wanted a raisin pay!
**DAFFYNITION DECODER**

1. Campaign: Hurt While Camping
2. Royalty: What a Queen Drinks

TO DECODE THESE TWO DAFFYNITIONS: Do each exercise below. Find your answer in the appropriate answer column and notice the letter next to it. Each time the exercise number appears in the code, write the letter below it.

**Answers**

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**Math Without Computing**

- Use the question in the box below to create a story problem.
- Write the answer in the box below.

What is Green, Turns in Circles, and Scratches Itself?

Find the answer to each exercise in the list of answers under the exercises. Cross out the letter above each answer. When you finish, the answer to the title question will remain.

**Answers**

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**SPINITCH**
Maze Phrase
Do each exercise and find your answers in the maze. SHADE IN each room that contains a correct answer.

1. A salesman for Tickle Toys traveled 4 different states. In 9 weeks, he traveled a total of 18,946 miles. Find the average number of miles he traveled per week.

2. A. What is the total lift capacity per hour? B. What is the total lift capacity per day?

3. In 8 football plays, Grunge Helmet had gains of 4, 3, 2, 1, 3, 4, 7, and 8 yards. What was this average gain per play?

4. Zorna ran 6 laps around a 440-yard track. Her lap times were 99.75 seconds, 99.75 seconds, 99.75 seconds, 99.75 seconds, 99.75 seconds, and 99.75 seconds. Find the following:
   A. The average time for the first 3 laps. B. The average time for the last 3 laps. C. The average time for all 6 laps.

5. A. The average of Kim's scores. B. The average of Tiffy's scores. C. The average of the sum of the students' scores. D. The average of the scores on Test 1. E. The average of the scores on Test 2.

6. Andy 94 78 87 71
   97
   Dan 84 93 91 75 82
   87
   Karen 79 86 100 94 91
   80

7. The ski resort has 9 chairlifts. Each has a capacity of 30 people. Find the following:
   A. What is the total lift capacity per hour? B. What is the total lift capacity per day?

8. A. What was Deke's average score? B. A. What was the average score of the last 3 games?

9. The Skull Band bought an amplifier for $375 and two speakers at $125 each. If the players divided the total cost equally, how much will each pay?

10. The St. Louis Cardinals scored a combined total of 27 runs against the Cincinnati Reds over the past 3 games. Find the average number of runs scored per game.

11. Andy 94 78 87 71
   97
   Dan 84 93 91 75 82
   87
   Karen 79 86 100 94 91
   80

12. The average of Andy's scores. B. The average of Dan's scores. C. The average of the average of the students' scores. D. The average of the scores on Test 1. E. The average of the scores on Test 2.

13. A. The average of Sam's scores. B. The average of Bill's scores. C. The average of the average of the students' scores. D. The average of the scores on Test 1. E. The average of the scores on Test 2.

14. In 8 football plays, Grunge Helmet had gains of 4, 3, 2, 1, 3, 4, 7, and 8 yards. What was this average gain per play?

15. A. The average of Andy's scores. B. The average of Dan's scores. C. The average of the average of the students' scores. D. The average of the scores on Test 1. E. The average of the scores on Test 2.

16. Andy 94 78 87 71
   97
   Dan 84 93 91 75 82
   87
   Karen 79 86 100 94 91
   80

17. A. The average of Kim's scores. B. The average of Tiffy's scores. C. The average of the sum of the students' scores. D. The average of the scores on Test 1. E. The average of the scores on Test 2.

18. A. The average score of the last 3 games. B. What was the average score of the last 3 games?

19. Andy 94 78 87 71
   97
   Dan 84 93 91 75 82
   87
   Karen 79 86 100 94 91
   80

20. A. The average of Kim's scores. B. The average of Tiffy's scores. C. The average of the sum of the students' scores. D. The average of the scores on Test 1. E. The average of the scores on Test 2.
Did You Hear About...

The kid who finally got to cut his hair because his mother couldn't stand it anymore.

Do each exercise and find your answer in the appropriate answer column. Notice the number of the exercise. If the answer has a letter, shade in the box instead of writing the letter in it.

**Answers J-R**

1. 623
2. 1375
3. 308
4. 3135
5. 374
6. 201
7. 406
8. 172
9. 859
10. 458

**Answers A-E**

1. 413
2. 164
3. 172
4. 542
5. 356
6. 314
7. 463
8. 253
9. 368
10. 1375

**Favorite Class at Caterpillar School**

The name of the FAVORITE CLASS AT CATERPILLAR SCHOOL is hidden in the rectangle above. To find it, do each exercise and locate your answers in the rectangle. Shade in each area containing a correct answer.

**MOTH**

1. 425
2. 719
3. 588
4. 943
5. 327
6. 128
7. 49
8. 58
9. 316

**How Do You Find a Missing Train?**

Do each exercise and find your answer to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a letter, shade in the box instead of writing the letter in it.

1. 5
2. 27
3. 27
4. 72
5. 35
6. 171
7. 670
8. 159
9. 200
10. 256
11. 160
12. 250
13. 253
14. 197
15. 272
16. 73
17. 36
18. 144
19. 272
20. 86

**ANSWERS**

A-94

**MIDDLE SCHOOL MATH WITH PIZZA! BOOK A**

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Crack the Code

A CRYPTIC MESSAGE is written in code at the bottom of the page. To decode:

Do each exercise below. Find your answer in the answer column and notice the symbol next to it. Each time this symbol appears in the code, write the letter of the exercise above it.

Each exercise below. Find your answer in the answer column and notice the letter of the exercise above it.

Middle School Math Answers

What Is A Cow On Sale?

Do each exercise below. Find your answer in the answer column and notice the letter next to it. Look for this letter in the string of letters near the bottom of the page and CROSS IT OUT each time it appears. When you finish, write the remaining letters in the rectangle at the bottom of the page.

Do each exercise below. Find your answer in the answer column and notice the letter next to it. Look for this letter in the string of letters near the bottom of the page and CROSS IT OUT each time it appears. When you finish, write the remaining letters in the rectangle at the bottom of the page.

MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK A
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A-95

ANSWERS
Write the base ten numeral for each base two numeral below. Find your answers to the left. Start with the first answer. Connect the dots by the answers, in order. It's a crackup!

1. 1010₂
   A. 10
   B. 16
2. 1000₂
   A. 8
   B. 10
3. 1101₂
   A. 13
   B. 11
4. 1011₂
   A. 11
   B. 13
5. 1111₂
   A. 15
   B. 17
6. 1001₂
   A. 5
   B. 9
7. 1010₂
   A. 10
   B. 11
8. 1110₂
   A. 14
   B. 16
9. 1100₂
   A. 12
   B. 10
10. 101₂
    A. 3
    B. 5

What Did Emperor Klodius Numerus Say About His Ability With Roman Numerals?

Draw a straight line connecting each Roman numeral with its value. When you finish, you will notice that some areas inside the rectangle contain an "S," which stands for "shade." Shade in all of these areas. The answer to the title question will appear.