Hello Mathematicians!

Enclosed you will find a number of worksheets to keep your brain growing during this homeschool experience. Pace yourself and strive to do about 30 minutes a day. Most of this material is review for you, things we have covered in class. The rest of the material may be new to you, but want to provide you with a challenge. Please know that if you have questions, we are here for you! You can reach us at our school email address.

To Reach Mrs. Owens: aowens@kfschools.org

To reach Mrs. Boyd: pboyd@kfschools.org

We miss you a ton!
Stay Well!
Why Do Flies Always Bring Their Stopwatches to Parties?

Write an integer for each exercise. Find the point on the number line that corresponds to the integer. Write the letter of the exercise above the number line at that point.

Write an integer for each situation.
- E 3 units to the left of 0
- S the opposite of 8
- N 15 ft above sea level
- E a gain of 6 yd
- I 5° below zero
- N a deposit of $20
- E 14 steps backward
- T four seconds after liftoff
- I a loss of ten pounds
- W one floor down
- E 19 m below sea level
- H the opposite of -11

Write an integer for each expression.
- A -(17)
- I -(-14)
- E |-1|
- R |8|
- U -n if n = 16
- G -n if n = -16
- B -(12 + 8)
- H |16 - 11|
- E |-9|
- S |15|
- A |x| if x = -12
- F |-x| if x = -12

Write an integer for each question.
- N Which is greater, 2 or -13?
- T Which is greater, -7 or -6?
- E Which is greater, -11 or 9?
- C Which is less, -18 or -4?
- U Which is less, |-20| or 19?
- H Which is less, 0 or -(3)?

The table below gives the starting point, direction, and length of arrows drawn on the number line. Complete the table by writing the endpoint of each arrow.

<table>
<thead>
<tr>
<th>Starting Point</th>
<th>Direction, Length</th>
<th>Endpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>negative, 4</td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td>positive, 9</td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td>negative, 9</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>positive 13</td>
<td></td>
</tr>
<tr>
<td>-10</td>
<td>positive, 23</td>
<td></td>
</tr>
</tbody>
</table>
Why Did Farmer John Ask the Supermarket Manager Where the Overalls Were?

Write the letter of each exercise in the box containing the answer.

Find the sum.

| E. −7 + (−2) | O. −4 + 9 |
| A. −6 + (−8) | T. −9 + 4 |
| I. −17 + (−10) | S. 38 + (−3) |
| S. 12 + 13 | E. 11 + (−18) |
| T. −75 + (−5) | C. −24 + (−24) |

| Find the sum. |
| O. −64 + 60 |
| H. −18 + 8 |
| E. 12 + (−36) |
| M. −45 + (−45) |
| A. −15 + 18 |
| T. 52 + (−58) |
| V. 101 + (−2) |
| H. 180 + 180 |
| R. −30 + (−40) |
| L. 999 + (−999) |

| −5 | −10 | −24 | −19 | 25 | −6 | 5 | −70 | −9 | 92 | −48 | 0 | 3 | −27 | −90 | 35 | −8 | −80 | −4 | 41 | 360 | −14 | 99 | −7 |

| Find the sum. |
| E. −10 + (−1) |
| L. 9 + (−39) |
| S. −24 + 6 |
| E. −32 + 64 |
| T. 60 + (−15) |
| O. 88 + (−55) |
| I. −7 + (−21) |
| T. −100 + 25 |

| Evaluate if \( a = 7, \ b = −20, \ x = −34, \ y = −9. \) |
| R. \( a + b \) |
| A. \( x + y \) |
| S. \( b + b \) |
| C. \( x + x \) |
| P. \( −12 + a \) |
| B. \( 100 + y \) |
| E. \( b + 81 \) |
| R. \( x + 50 \) |

Solve.

H. The price of a stock went down $4.25 on Monday and then down $2.75 on Tuesday. What was the overall change in price for the two days?

E. Between midnight and 6:00 A.M., the temperature dropped 10°F. Between 6:00 A.M. and noon, the temperature rose 18°F. What was the change in temperature from midnight to noon?

Scores for three rounds of a computer game are given in the table. Solve.

L. What was the total number of points scored in the first two rounds?

<table>
<thead>
<tr>
<th>Round</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>−800</td>
</tr>
<tr>
<td>3</td>
<td>700</td>
</tr>
</tbody>
</table>

V. What was the total number of points scored in all three rounds?
Why Did the Football Coach Send in His Second String?

For each set of exercises, there is one extra answer. Write the letter of this answer in each box containing the number of that set.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P: $-18$</td>
<td>N: $9n + 2$</td>
<td>E: $-11x$</td>
<td>N: $-6a + (-7)$</td>
<td>G: 16</td>
<td>W: 5</td>
</tr>
<tr>
<td></td>
<td>C: 5</td>
<td>T: $-13n + 6$</td>
<td>U: $-13$</td>
<td>S: $-8x$</td>
<td>F: $-9$</td>
<td>D: 11</td>
</tr>
<tr>
<td></td>
<td>Y: $-20$</td>
<td>R: $9n + (-9)$</td>
<td>Y: $10x + 8$</td>
<td>D: $-6a + 5$</td>
<td>L: $-5$</td>
<td>T: 8</td>
</tr>
<tr>
<td></td>
<td>F: $-14$</td>
<td></td>
<td></td>
<td>E: $-6a + 16$</td>
<td>C: 22</td>
<td>S: $-11$</td>
</tr>
<tr>
<td>2.</td>
<td>J: 22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>H: $-5$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>V: 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D: $-29$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A: 20</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.</td>
<td>B: $-15$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M: 25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>O: $-18$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>U: 19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T: $-16$</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4.</td>
<td>E: $-6$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>G: 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R: 18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>H: $-15$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>K: $-14$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>L: 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I: $-3$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F: $-2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W: 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B: $-5$</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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Integers and Expressions: Adding Three or More Integers
**Why Was the Little Cow Standing Alone?**

In a Big Field of Beautiful Flowers?

Write the letter of each exercise in the box containing the answer.

**Set 1. Find the difference.**

<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>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>72</td>
<td>-100</td>
<td>-4</td>
<td>3</td>
<td>30</td>
<td>20</td>
<td>1</td>
<td>10</td>
<td>7</td>
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<tr>
<td>-13</td>
<td>60</td>
<td>-10</td>
<td>-12</td>
<td>0</td>
<td>50</td>
<td>30</td>
<td>16</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

**Set 2. Find the difference.**

<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>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>2</td>
<td>-14</td>
<td>-2</td>
<td>5</td>
<td>14</td>
<td>10</td>
<td>1</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>-2</td>
<td>-12</td>
<td>-9</td>
<td>-1</td>
<td>-10</td>
<td>-5</td>
<td>3</td>
<td>0</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

**Set 2 answers:**

<table>
<thead>
<tr>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>10k + 7</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>3k + 9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>-k + 16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>3k - 3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
</tr>
</tbody>
</table>

**Set 3. Simplify.**

<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>
</tr>
</thead>
<tbody>
<tr>
<td>4x</td>
<td>-7x</td>
<td>4k</td>
<td>-6k</td>
<td>6x</td>
<td>7k</td>
<td>-2</td>
<td>5x</td>
<td>-16x</td>
<td>4</td>
</tr>
<tr>
<td>5x</td>
<td>-6x</td>
<td>10x</td>
<td>-x</td>
<td>3x</td>
<td>-(-2x)</td>
<td>5k</td>
<td>-(-5k)</td>
<td>5k</td>
<td>-(-5k)</td>
</tr>
</tbody>
</table>

**Set 3 answers:**

<table>
<thead>
<tr>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>25k</td>
<td>-5</td>
<td>9x</td>
<td>4k</td>
<td>-6k</td>
<td>7k</td>
<td>-2</td>
<td>5x</td>
<td>-16x</td>
<td>4</td>
</tr>
<tr>
<td>3k</td>
<td>-2</td>
<td>5x</td>
<td>-16x</td>
<td>3</td>
<td>16x</td>
<td>7k</td>
<td>-4</td>
<td>16x</td>
<td>14x</td>
</tr>
<tr>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
<td>-3k</td>
</tr>
</tbody>
</table>
Why Did the Dog Get a Ticket?

Simplify each expression. Partner A should do the left side and Partner B the right side. After completing each set, find matching answers. One will have a letter and the other a number. Write the letter in the matching numbered box at the bottom of the page.

<table>
<thead>
<tr>
<th>Set 1</th>
<th>Set 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>U. (-9n + 5n + 7)</td>
<td>2. (-11n + 3n + 2)</td>
</tr>
<tr>
<td>A. (6n - (-2n) + 8)</td>
<td>14. (5n - (-2n) + 6)</td>
</tr>
<tr>
<td>O. (2 - n - 7n)</td>
<td>6. (7 - n - 3n)</td>
</tr>
<tr>
<td>I. (10n + 4 + (-3n) + 2)</td>
<td>11. (10n + 6 + (-2n) + 2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Set 2</th>
<th>Set 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. (7a + (-10) - 2a + 1)</td>
<td>3. (7a + (-22) - 4a + 2)</td>
</tr>
<tr>
<td>O. (-15a - 6 - 11 + 4a)</td>
<td>16. (-9a - 1 + 15 + 3a)</td>
</tr>
<tr>
<td>G. (9 - 9a + 5 - (-3a))</td>
<td>5. (-10 - 14a - 7 - (-3a))</td>
</tr>
<tr>
<td>R. (-20 + 8a + (-4a) - a)</td>
<td>9. (-9 + 12a + (-6a) - a)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Set 3</th>
<th>Set 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. (6k + 5 + 4k - 8 - 3k)</td>
<td>7. (8k - 5 + 4k - 12 - 3k)</td>
</tr>
<tr>
<td>R. (-k - (-9k) - 11 + 2k - 4)</td>
<td>15. (-k - (-6k) + 7 + 2k - 10)</td>
</tr>
<tr>
<td>B. (-7 + 14k - 13 + (-5k) + 3)</td>
<td>1. (-4 + 5k - 6 + (-9k) + 3)</td>
</tr>
<tr>
<td>F. (4 + (-2k) - 12 - 2k - (-1))</td>
<td>12. (4 + (-3k) - 20 + 13k - (-1))</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Set 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>K. (6x + 8y + 9 + 2x - y - 11)</td>
<td>4. (2x - 5y + 8 + 3x - y - 15)</td>
</tr>
<tr>
<td>D. (-3x + y + 2 - (-8x) - 7y + (-9))</td>
<td>8. (-10x + y + 6 - (-x) + 12y + (-6))</td>
</tr>
<tr>
<td>L. (-x + 6y - 4x + 9y + (-4x) - 2y)</td>
<td>10. (-x + 4y + 7x - 9y + (-5x) - 2y)</td>
</tr>
<tr>
<td>B. (10 + y - (-x) - 6 - 8y - 4)</td>
<td>13. (8 - (-6y) + 8x - 9 + y - 1)</td>
</tr>
</tbody>
</table>

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Integers and Expressions: Simplifying Expressions
# What Would You Say About a Dish Made From Beef, Potatoes, Carrots, and Onions That Tastes TERRIBLE?

For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

<table>
<thead>
<tr>
<th></th>
<th>Find the product.</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a. $-5 \cdot 6$</td>
<td>K</td>
<td>-36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. $4 \cdot (-9)$</td>
<td>B</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. $(-3)(-12)$</td>
<td>S</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. $(-30)(0)$</td>
<td>U</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>a. $-7 \cdot (-8)$</td>
<td>O</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. $-20 \cdot 5$</td>
<td>A</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. $9 \cdot (-6)$</td>
<td>L</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. $(-4)(-25)$</td>
<td>G</td>
<td>-54</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D</td>
<td>-100</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>a. $-4 \cdot 8$</td>
<td>C</td>
<td>-600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. $5 \cdot 12$</td>
<td>M</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. $20 \cdot (-30)$</td>
<td>P</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. $(-16)(-2)$</td>
<td>T</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>-32</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>a. $2 \cdot 3 \cdot (-4)$</td>
<td>E</td>
<td>-60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. $(-3)(-3)(-3)$</td>
<td>A</td>
<td>-24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. $(-12)(2)(-1)$</td>
<td>T</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. $(-5)(-4)(3)$</td>
<td>N</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>O</td>
<td>-27</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>a. $(-2)(-9)(-5)$</td>
<td>E</td>
<td>-90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. $-7 \cdot 3 \cdot 4$</td>
<td>S</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. $11(-3)(-3)$</td>
<td>A</td>
<td>-48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. $8 \cdot 3 \cdot (-2)$</td>
<td>R</td>
<td>99</td>
<td></td>
</tr>
</tbody>
</table>

|   | Find the product. |   |   |   |
| 6 | a. $(-8)^2$       | N | -27 |   |
|   | b. $(-3)^3$       | P | 700 |   |
|   | c. $3(-4)^2$      | R | 48  |   |
|   | d. $7(-10)^2$     | L | 64  |   |
| 7 | a. $(-1)^3(5)(8)$ | N | 1400|   |
|   | b. $(-5)(-2)^3$   | G | 40  |   |
|   | c. $(-3)^2(-5)^2$ | W | -225|   |
|   | d. $2 \cdot 7 \cdot (-10)^2$| D | -225|   |

|   | Evaluate if $a = 6$, $b = -2$. |   |   |
| 8 | a. $ab$            | U | 144 |   |
|   | b. $ab^2$          | A | -12 |   |
|   | c. $(ab)^2$        | S | 24  |   |
|   | d. $-a^2$          | I | -144|   |

|   | Evaluate if $x = -5$, $y = -8$. |   |   |
| 9 | a. $2xy$           | L | -40 |   |
|   | b. $xy^2$          | B | 360 |   |
|   | c. $-xy$           | F | 1000|   |
|   | d. $x^3y$          | H | -320|   |

|   | Simplify the expression. |   |   |   |
| 10| a. $15 \cdot (-n)$  | T | -9n |   |
|   | b. $(-n)(-9)$       | L | -9n^2|   |
|   | c. $(3n)(-5)$      | E | 9n  |   |
|   | d. $-9(-n)(-n)$    | P | -15n |   |
|   |                 | H | 15n  |   |
WHat is the title of this picture?

Find each solution in the coded title. Each time it appears, write the letter of the exercise above it.

**Coded Title:**

- 83  -33  13  86  -5  -11  -34  -29  17  65  -33  -24  0  -33  15  23
- -8  35  19  -48  42  65  35  -34  7  -37  0  -11  23

*a box terrier

**T** \( n + 7 = 20 \)

**O** \( x + 9 = -2 \)

**U** \( a - 14 = 51 \)

**N** \( y - 18 = -3 \)

**E** \( 5 + u = 12 \)

**L** \( -6 + n = -30 \)

**F** \( 16 + q = 11 \)

**A** \( w - 10 = 25 \)

**K** \( -3 + x = 80 \)

**S** \( 12 + t = -36 \)

**B** \( v - 22 = -5 \)

**I** \( b - 4 = -37 \)

**R** \( k + 40 = 6 \)

**G** \( 52 + d = 75 \)

**Q** \( -49 + y = -7 \)

**D** \( m - 99 = -99 \)
What Do Opticians, Optometrists, and Ophthalmologists Have In Common?

Solve each equation or problem, then find your solution in the corresponding set of answer boxes. Write the letter of the exercise in the box containing the answer.

E  \( y + 17 = 2 \)  L  \( -9 + m = 20 \)  T  \( k - 8 = -3 \)

A  \( 19 = a + 5 \)  E  \( 7 = x - 23 \)  T  \( 3 = 10 + v \)

Y  \( n - 6 = -50 \)  W  \( 8 + q = -11 \)  H  \( t - (-1) = 45 \)

L  The sum of a number and 9 is \(-30\). Find the number.  N  Twelve less than a number is \(-75\). Find the number.

O  \( x + (-3) = 22 \)  E  \( p - (-3) = 100 \)  T  \( 25 + d = 8 \)

C  \( -16 + b = 32 \)  L  \( w + 38 = 5 \)  O  \( j + (-61) = -2 \)

H  \( -9 = h + 47 \)  E  \( 13 = x - 13 \)  O  \( t - (-29) = 29 \)

S  Rob and Bob together scored 88 points. If Bob scored 54 points, how many points did Rob score?

Y  The temperature outside an airliner was \(-50^\circ F\). This was \(110^\circ\) less than the temperature on the ground. What was the temperature on the ground?

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Equations, Problems, and Functions: Solving One-Step Equations: Addition or Subtraction
Can You Answer This Question?

Solve each equation in the top block and find the solution in the bottom block. Transfer the word from the top box to the corresponding bottom box. You will get a question. Can you answer it?

<table>
<thead>
<tr>
<th>STREET</th>
<th>THE</th>
<th>THAT</th>
<th>OFTEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>8x = -72</td>
<td>-5x</td>
<td>( \frac{x}{3} = -10 )</td>
<td>( \frac{x}{-12} = -5 )</td>
</tr>
<tr>
<td>IS</td>
<td>THIRD</td>
<td>STREETF</td>
<td>AND</td>
</tr>
<tr>
<td>-16x = 32</td>
<td>( \frac{x}{2} = 36 )</td>
<td>7x = 490</td>
<td>( \frac{x}{4} = 25 )</td>
</tr>
<tr>
<td>THE</td>
<td>GIVEN</td>
<td>SIXTYC</td>
<td>STREET</td>
</tr>
<tr>
<td>( \frac{x}{200} = 3 )</td>
<td>15x = -15</td>
<td>( \frac{-n}{8} = -8 )</td>
<td>-24n = 72</td>
</tr>
<tr>
<td>RUNS</td>
<td>WHY</td>
<td>NAME</td>
<td>SIXTY</td>
</tr>
<tr>
<td>( -\frac{n}{9} = 4 )</td>
<td>( -\frac{n}{7} = -50 )</td>
<td>-13n = -130</td>
<td>2n = 900</td>
</tr>
<tr>
<td>STREET</td>
<td>FIRST</td>
<td>&quot;MINUTE&quot;</td>
<td>BETWEEN</td>
</tr>
<tr>
<td>( \frac{n}{12} = 12 )</td>
<td>6n = -360</td>
<td>( \frac{n}{99} = -1 )</td>
<td>-44n = 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>n = 350</th>
<th>x = -2</th>
<th>x = 600</th>
<th>n = 144</th>
<th>x = -30</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = -36</td>
<td>n = 0</td>
<td>n = 64</td>
<td>n = -60</td>
<td>x = -9</td>
</tr>
<tr>
<td>x = -100</td>
<td>n = 450</td>
<td>x = -72</td>
<td>n = -3</td>
<td>x = 60</td>
</tr>
<tr>
<td>x = -1</td>
<td>x = 8</td>
<td>n = 10</td>
<td>n = -99</td>
<td>x = 70</td>
</tr>
<tr>
<td>L</td>
<td>-5y = 60</td>
<td>A</td>
<td>-32 = 8m</td>
<td>S</td>
</tr>
<tr>
<td>---</td>
<td>---------</td>
<td>---</td>
<td>--------</td>
<td>---</td>
</tr>
<tr>
<td>E</td>
<td>( \frac{a}{6} = -9 )</td>
<td>P</td>
<td>( \frac{1}{5} k = 20 )</td>
<td>T</td>
</tr>
<tr>
<td>C</td>
<td>77 = -11w</td>
<td>I</td>
<td>15 = ( -\frac{n}{8} )</td>
<td>U</td>
</tr>
</tbody>
</table>

1. The product of a number and 9 is -450. Find the number.
2. The quotient of a number and -3 is -80. Find the number.

<table>
<thead>
<tr>
<th>H</th>
<th>10q = -45</th>
<th>A</th>
<th>( \frac{1}{7} h = -12 )</th>
<th>S</th>
<th>-360 = -4p</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>( -\frac{a}{25} = 8 )</td>
<td>Y</td>
<td>(-x = 17)</td>
<td>F</td>
<td>-90d = 9</td>
</tr>
<tr>
<td>O</td>
<td>-4 = (-\frac{1}{16} b)</td>
<td>B</td>
<td>-400 = 20v</td>
<td>L</td>
<td>(-y = -180)</td>
</tr>
</tbody>
</table>

1. Thirty copies of a textbook weigh a total of 75 lb. What is the weight of each book?
2. One-ninth of the candies in a bag of M&M’s are red. If there are 16 red candies, how many M&M’s are in the bag?
# Why Is a Shooting Star Better Than a Hamburger?

For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

## 1 Find the quotient.
- **a.** $-40 \div 5$  
  **b.** $30 \div (-15)$  
  **c.** $-88 \div (-11)$  
  **d.** $-100 \div (-4)$

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>J</strong></td>
<td>-2</td>
</tr>
<tr>
<td><strong>S</strong></td>
<td>-25</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>-8</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td>25</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>8</td>
</tr>
</tbody>
</table>

## 2 Find the quotient.
- **a.** $-54 \div 9$  
  **b.** $-36 \div 12$  
  **c.** $75 \div -25$  
  **d.** $0 \div -10$

<p>| | |</p>
<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U</strong></td>
<td>-3</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>-6</td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>6</td>
</tr>
</tbody>
</table>

## 3 Find the quotient.
- **a.** $-48 \div (-3)$  
  **b.** $-36 \div 18$  
  **c.** $180 \div (-10)$  
  **d.** $900 \div 450$

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>D</strong></td>
<td>-2</td>
</tr>
<tr>
<td><strong>H</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>-18</td>
</tr>
<tr>
<td><strong>F</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

## 4 Simplify.
- **a.** $\frac{150}{-2}$  
  **b.** $\frac{-7500}{-75}$  
  **c.** $\frac{-24 + 9}{-8 + 3}$  
  **d.** $\frac{-24 + 9}{-8 + 3}$

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<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>K</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>-75</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>O</strong></td>
<td>-6</td>
</tr>
<tr>
<td><strong>K</strong></td>
<td>100</td>
</tr>
</tbody>
</table>

## 5 Simplify.
- **a.** $\frac{-13 + 1}{3}$  
  **b.** $\frac{-15(-4)}{-6}$  
  **c.** $\frac{-20 - 25}{-15}$  
  **d.** $\frac{100 - (-20)}{30}$

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<thead>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>-3</td>
</tr>
<tr>
<td><strong>S</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>U</strong></td>
<td>-10</td>
</tr>
<tr>
<td><strong>O</strong></td>
<td>-4</td>
</tr>
</tbody>
</table>

## 6 Simplify.
- **a.** $\frac{-49}{7} + \frac{-64}{8}$  
  **b.** $\frac{150}{-15} + \frac{-13}{-13}$  
  **c.** $-\frac{26 - 60}{5} = -12$  
  **d.** $-\frac{99 - 0}{-99}$

<p>| | |</p>
<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>E</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>G</strong></td>
<td>-9</td>
</tr>
<tr>
<td><strong>W</strong></td>
<td>99</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>-15</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>-10</td>
</tr>
</tbody>
</table>

## 7 Evaluate if $x = -2$, $y = -6$.
- **a.** $\frac{xy}{-3}$  
  **b.** $\frac{8y}{x}$  
  **c.** $-\frac{9x}{y}$  
  **d.** $\frac{144}{-xy}$

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<thead>
<tr>
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<th></th>
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<tbody>
<tr>
<td><strong>D</strong></td>
<td>24</td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>-3</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>-4</td>
</tr>
<tr>
<td><strong>K</strong></td>
<td>15</td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>-12</td>
</tr>
</tbody>
</table>

## 8 Evaluate if $k = 3$, $n = -8$.
- **a.** $\frac{kn}{2}$  
  **b.** $\frac{k + n}{-5}$  
  **c.** $\frac{96}{-kn}$  
  **d.** $\frac{9n}{4k}$

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<table>
<thead>
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<tbody>
<tr>
<td><strong>S</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>-6</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>U</strong></td>
<td>-12</td>
</tr>
</tbody>
</table>

## 9 Solve mentally.
- **a.** $\frac{x}{7} = -6$  
  **b.** $\frac{b}{-3} = -14$  
  **c.** $\frac{360}{q} = -36$  
  **d.** $\frac{-64}{m} = 4$

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<thead>
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</thead>
<tbody>
<tr>
<td><strong>D</strong></td>
<td>-10</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>-42</td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>16</td>
</tr>
<tr>
<td><strong>S</strong></td>
<td>-16</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>42</td>
</tr>
</tbody>
</table>

## 10 Solve mentally.
- **a.** $8y = -56$  
  **b.** $-3p = -63$  
  **c.** $80 + u = 2$  
  **d.** $80 \div (-v) = 2$

<p>| | |</p>
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<thead>
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<tbody>
<tr>
<td><strong>B</strong></td>
<td>21</td>
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<tr>
<td><strong>K</strong></td>
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<tr>
<td><strong>N</strong></td>
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</tr>
<tr>
<td><strong>G</strong></td>
<td>-7</td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>-21</td>
</tr>
</tbody>
</table>
What Is the Best Way To Become an Astronaut?

Choose the correct answer for each exercise and circle the number-letter pair next to it. Write the letter in the matching numbered box at the bottom of the page.

### Set 1. Simplify.

<table>
<thead>
<tr>
<th>a. $12 + (5 - 9)$</th>
<th>b. $-7(-1 + 8)$</th>
<th>c. $20 - (-3) + 15$</th>
<th>d. $(-5)(-4)(-18)$</th>
<th>e. $16 - (-3 - 8)$</th>
<th>f. $[-2 - (-9)] + 75$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$26 \cdot S$</td>
<td>$23 \cdot J$</td>
<td>$14 \cdot A$</td>
<td>$26 \cdot S$</td>
<td>$16 \cdot D$</td>
<td>$30 \cdot B$</td>
</tr>
<tr>
<td>$27$</td>
<td>$-45$</td>
<td>$82$</td>
<td>$27$</td>
<td>$8$</td>
<td>$30$</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tbody>
</table>

### Set 2. Simplify.

<table>
<thead>
<tr>
<th>a. $(-3 \cdot 4) + (-4 \cdot 3)$</th>
<th>b. $(21 - 30)(-12 + 1)$</th>
<th>c. $(-5)^3(-1)^{10}$</th>
<th>d. $100 - (-50) + (-25)$</th>
<th>e. $(-30 - 30) \div (-5)$</th>
<th>f. $(-64 \div 8) + (-81 \div 9)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$19 \cdot A$</td>
<td>$12 \cdot T$</td>
<td>$18 \cdot R$</td>
<td>$99$</td>
<td>$12 \cdot T$</td>
<td>$9 \cdot H$</td>
</tr>
<tr>
<td>$99$</td>
<td>$-20$</td>
<td>$-9$</td>
<td>$110$</td>
<td>$23 \cdot U$</td>
<td>$125$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$24 \cdot S$</td>
</tr>
</tbody>
</table>

### Set 3. Simplify.

<table>
<thead>
<tr>
<th>a. $\frac{-13 + 5}{13 - 15}$</th>
<th>b. $(-2)^4(-10)^2$</th>
<th>c. $\frac{(-8)(-8)}{-8 + (-8)}$</th>
<th>d. $\frac{-140}{14} + \frac{140}{10}$</th>
<th>e. $5(-3)^3$</th>
<th>f. $\frac{-77}{-7} - \frac{99}{99}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\frac{-8}{-24}$</td>
<td>$12 \cdot T$</td>
<td>$11 \cdot R$</td>
<td>$-40$</td>
<td>$18 \cdot T$</td>
<td>$\frac{77}{77}$</td>
</tr>
<tr>
<td></td>
<td>$-4$</td>
<td>$15$</td>
<td></td>
<td>$12$</td>
<td>$1$</td>
</tr>
<tr>
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<td></td>
</tr>
</tbody>
</table>

### Set 4. Evaluate if $a = -5$, $b = -8$, and $c = 2$.

<table>
<thead>
<tr>
<th>a. $abc$</th>
<th>b. $3a - b$</th>
<th>c. $-a^2 + \frac{1}{4c}$</th>
<th>d. $2b - (-c)$</th>
<th>e. $cb^2 + a$</th>
<th>f. $\frac{(ac)^3}{5b}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$11 \cdot O$</td>
<td>$20 \cdot K$</td>
<td>$25 \cdot E$</td>
<td>$17 \cdot I$</td>
<td>$20 \cdot K$</td>
<td>$17 \cdot I$</td>
</tr>
<tr>
<td>$-7$</td>
<td>$123$</td>
<td>$130$</td>
<td>$-80$</td>
<td>$80$</td>
<td>$-80$</td>
</tr>
<tr>
<td></td>
<td>$6 \cdot N$</td>
<td>$7 \cdot S$</td>
<td>$22 \cdot R$</td>
<td>$29 \cdot C$</td>
<td>$29 \cdot C$</td>
</tr>
<tr>
<td></td>
<td>$-20$</td>
<td>$-14$</td>
<td>$-11$</td>
<td>$-3$</td>
<td></td>
</tr>
</tbody>
</table>

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Integers and Expressions: All Four Operations with Integers

- **36**
Why Did the Chicken Cross the Road?

TO GET TO THE OTHER SIDE, of course. But do you know the answers to THESE two questions?

1. What do you call a chicken crossing the road?
   9 lb 10 h -11 -80 8 h -65 12 37 lb 4 -36 7 lb 18 10 h 8 h 4 10 h -36

2. Why did the turkey cross the road?
   8 h 10 h 39 9 lb -65 10 h -7 6 -33 -45 6 11 h 32 -96 -30 -36 8 h 15 41 lb -45 4 41 lb 20 6 -36

Solve the equation or problem. Find your solution in the code. Each time it appears, write the exercise letter above it.

E. 5 + 4n = 29

U. -8 - 3y = 25

S. 19 + \frac{x}{2} = 4

R. -\frac{1}{5}d - 1 = 12

M. 90 = 10p - 90

Y. -11 = 61 - 6q

H. -17 - \frac{u}{3} = -2

A. -8 = 4 + \frac{1}{8}b

I. -64 = -15m - 4

V. 12 - 9w = 75

L. -13 - \frac{1}{4}h = 7

W. \frac{a}{-16} + 101 = 99

K. Jo is thinking of a number. Four less than 9 times the number is 176. Find Jo's number.

N. Mo is thinking of a number. Eleven more than one third of the number is -1. Find Mo's number.

C. Three desks and a bookcase together weigh 157 lb. The bookcase weighs 34 lb. How much does each desk weigh?

T. Mr. Piper's plumbing needed repairs. The plumber charged $98 for parts plus $45 per hour for labor. If the bill totaled $458, how many hours of labor were required?

P. A table and 8 chairs together weigh 97 lb. If the table weighs 25 lb, how much does each chair weigh?

O. Osgosh would like to buy a new pair of skates for $115. So far he has saved $40. If he earns $7.50 per hour, how many hours must he work until he can buy the skates?
What Is Green and Famous for Running Away From Jail?

Solve each problem and find your answer in the answer section. Look for the letter of the correct answer 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 Ken is thinking of a number. Nine more than the product of 4 and the number is 73. Find Ken's number.

2 Barbie is thinking of a number. Twenty less than one third of the number is 72. Find Barbie's number.

3 The length of a rectangular field is 75 yd. This is 3 yd more than twice the width. How wide is the field?

4 Grandpa Gump is 63 years old. His age is 2 years less than 5 times the age of Billy Gump. How old is Billy?

5 Zorna weighs 92 lb. Her weight is 6 lb more than half of her father's weight. How much does her father weigh?

6 A banana has 85 calories. This is 10 calories less than one eighth of the calories in a banana split. How many calories are in a banana split?

7 The Space Club is having some posters printed. The printer charges $250 plus $2 per poster. How many posters can be printed for $1000?

8 Pizzazz Publications is having some books printed. The printer charges $800 plus $5 per book. How many books can be printed for $4000?

9 Mr. Glock's car broke down on the turnpike. Acme Towing charged $30 plus $3 per mile to tow the car. If Mr. Glock paid $117, how far was the car towed?

10 Rolex worked 40 hours last week. He had $74 deducted from his earnings for taxes. If he had $286 left after the deduction, how much does Rolex earn per hour?
What Is the First Page in a Geography Book?

Cross out the letters above each correct answer. When you finish, write the remaining letters in the spaces at the bottom of the page.

1. Mr. Enigma said, "Five less than one fourth of my age is 12." How old is Mr. Enigma?

2. Suppose you have $40 and earn $7 per hour. How many hours must you work until you have $131?

3. Valley Video charges a $15 annual fee plus $3 per movie for rentals. Last year, Jennifer spent $99 at the store. How many movies did she rent?

4. Kimo's car needed work. The mechanic charged him $140 for parts plus $48 per hour for labor. If the bill totaled $260, how many hours of labor were required?

5. Suppose you are a salesperson for Quark Computer Company. Each month you earn $500 plus one sixth of your sales. What amount must you sell this month to earn $3000?

6. For lunch Dregg had a hamburger and potato chips. The hamburger had 325 calories and each chip had 12 calories. If the meal had 541 calories, how many chips did Dregg eat?

7. Suppose you are a salesperson for Acme Dynamite Co. Each month you earn $2200 plus one fifteenth of your sales. What must your sales be this month to earn $4000?

8. When Ms. Sugar turned on her oven, the temperature inside was 70°F. The temperature began to rise at a rate of 20° per minute. How long did it take for the oven to reach 350°F?

9. Mega Middle School sells wrapping paper to raise money for student activities. The school keeps half of all sales, minus $300 for prizes to top sellers. How much wrapping paper must be sold for the school to earn $5000?

<table>
<thead>
<tr>
<th>BO</th>
<th>MA</th>
<th>TH</th>
<th>IS</th>
<th>AT</th>
<th>ME</th>
<th>ET</th>
</tr>
</thead>
<tbody>
<tr>
<td>$15,000</td>
<td>14 min</td>
<td>11 h</td>
<td>68</td>
<td>28</td>
<td>$10,600</td>
<td>12 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ST</th>
<th>AB</th>
<th>PA</th>
<th>LE</th>
<th>GE</th>
<th>OF</th>
<th>SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$27,000</td>
<td>$11,200</td>
<td>2.5 h</td>
<td>23</td>
<td>18</td>
<td>3.2 h</td>
<td>13 h</td>
</tr>
</tbody>
</table>
What Is the First Page in a Geography Book?

Cross out the letters above each correct answer. When you finish, write the remaining letters in the spaces at the bottom of the page.

1. Ms. Enigma said, "Five less than one third of my age is 14." How old is Ms. Enigma?

2. Suppose you have $50 and earn $8 per hour. How many hours must you work until you have $170?

3. Valley Video charges a $12 annual fee plus $3 per movie for rentals. Last year, Jennifer spent $90 at the store. How many movies did she rent?

4. Kimo’s car needed work. The mechanic charged him $130 for parts plus $40 per hour for labor. If the bill totaled $270, how many hours of labor were required?

5. Suppose you are a salesperson for Quark Computer Company. Each month you earn $400 plus one sixth of your sales. What amount must you sell this month to earn $2000?

6. For lunch Dregg had a hamburger and potato chips. The hamburger had 375 calories and each chip had 12 calories. If the meal had 639 calories, how many chips did Dregg eat?

7. Suppose you are a salesperson for Acme Dynamite Co. Each month you earn $1800 plus one fifteenth of your sales. What must your sales be this month to earn $3000?

8. When Ms. Sugar turned on her oven, the temperature inside was 75°F. The temperature began to rise at a rate of 25°F per minute. How long did it take for the oven to reach 400°F?

9. Mega Middle School sells wrapping paper to raise money for student activities. The school keeps half of all sales, minus $400 for prizes to top sellers. How much wrapping paper must be sold for the school to earn $5000?

<table>
<thead>
<tr>
<th>LA</th>
<th>CO</th>
<th>LD</th>
<th>WA</th>
<th>ND</th>
<th>NT</th>
<th>RY</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>$11,400</td>
<td>$10,800</td>
<td>$9600</td>
<td>57</td>
<td>11 min</td>
<td>26</td>
</tr>
<tr>
<td>IN</td>
<td>TO</td>
<td>BE</td>
<td>EN</td>
<td>DS</td>
<td>GE</td>
<td>TS</td>
</tr>
<tr>
<td>2.8 h</td>
<td>13 min</td>
<td>15 h</td>
<td>24</td>
<td>3.5 h</td>
<td>$18,000</td>
<td>12 h</td>
</tr>
</tbody>
</table>

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Equations, Problems, and Functions: Problem Solving Using Two-Step Equations (B)
Why Did the Magician Take Up Fishing?

Write each fraction in simplest form. Find your answer to the right and mark the letter next to it. For each set of exercises, there is one extra answer. Write the letter of this answer in each box containing the exercise number.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>24/32</td>
<td>-30/75</td>
<td>14/26</td>
<td>N 4/7 L 7/13 F 3/4 U 2/5</td>
</tr>
<tr>
<td>3</td>
<td>130/150</td>
<td>15/27</td>
<td>36/96</td>
<td>R 5/9 G 9/16 Y 3/8 P 13/15</td>
</tr>
<tr>
<td>4</td>
<td>-8/28</td>
<td>-35/60</td>
<td>34/68</td>
<td>S -7/12 T -2/7 H 7/15 W 1/2</td>
</tr>
<tr>
<td>5</td>
<td>22/99</td>
<td>75/100</td>
<td>30/72</td>
<td>J 2/9 C 5/12 E 3/4 L 6/11</td>
</tr>
<tr>
<td>6</td>
<td>-49/63</td>
<td>50/250</td>
<td>-36/44</td>
<td>W -3/10 R -1/5 I -7/9 F -9/11</td>
</tr>
<tr>
<td>7</td>
<td>18/180</td>
<td>16/64</td>
<td>15/51</td>
<td>M 5/17 D 3/14 K 1/4 T 1/10</td>
</tr>
<tr>
<td>8</td>
<td>4n^2/6n</td>
<td>6n/15n^2</td>
<td>16n^3/40n</td>
<td>A 2n^2/5 E 2n/3 R 2/5n I 2/5n^3</td>
</tr>
<tr>
<td>9</td>
<td>6x^2/8xy</td>
<td>3xy/9y^2</td>
<td>15xy^2/20y^2</td>
<td>S x/3y F 3x/4 T x/3y^2 Y 3x/4y</td>
</tr>
<tr>
<td>10</td>
<td>4ab^3/20a^2b</td>
<td>14a^3b^2/21ab</td>
<td>24a^3/36ab</td>
<td>B 2a^2/3b M b/5a K b^2/5a C 2a^2b/3</td>
</tr>
<tr>
<td>11</td>
<td>15w^5/18w^2</td>
<td>7w/10w^4</td>
<td>24w^7/48w^2</td>
<td>V 5w^3/6 J w^5/2 R 2w^4/3 S 7/10w^3</td>
</tr>
<tr>
<td>12</td>
<td>12x^5y^2/32xy^3</td>
<td>11xy^5/77xy</td>
<td>45xy^2/72x^4y^2</td>
<td>C 5y^4/8x^2 S 3x^4/8y F y^4/7 P 5/8x^3</td>
</tr>
<tr>
<td>13</td>
<td>6pq/30p^2q^4</td>
<td>20p^3q^10/45p^3q^10</td>
<td>p^8q^3/5pq^3</td>
<td>E 4/9 A 4p^7/9q^2 U p^7/5q^2 K 1/5pq^3</td>
</tr>
<tr>
<td>14</td>
<td>a^2b^5c/abc^4</td>
<td>ab^3c^8/a^2b^2c^2</td>
<td>a^8b^2c^4/ab^2c^6</td>
<td>S a^8/c^2 Y ab^4/c^3 E ab^6/c^2 F bc^6/a</td>
</tr>
</tbody>
</table>

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Number Theory:
Simplifying Fractions
Why Did the Little Boy Wear a Sheet To Go Trick-or-Treating?

Find each answer in the adjacent answer columns. Write the letter of the answer in the box containing the number of the exercise.

Rewrite each repeating decimal with a bar over the repeating block of digits.

1. \( \frac{1}{6} = 0.1666666666666666 \ldots \)  
   \( \text{F. } 0.\overline{16} \)  
   \( \text{S. } 0.16 \)

2. \( \frac{4}{7} = 0.571428571428571428 \ldots \)  
   \( \text{V. } 0.\overline{571428} \)  
   \( \text{E. } 0.571428 \)

3. \( \frac{19}{12} = 1.5833333333333333333 \ldots \)  
   \( \text{A. } 1.\overline{583} \)  
   \( \text{K. } 1.\overline{583} \)

4. \( -\frac{46}{111} = -0.414414141441414414 \ldots \)  
   \( \text{O. } -0.\overline{41} \)  
   \( \text{U. } -0.\overline{414} \)

5. \( \frac{54}{13} = 4.153846153846153846 \ldots \)  
   \( \text{S. } 4.\overline{153846} \)  
   \( \text{G. } 4.\overline{153846} \)

Write each decimal as a lowest-terms fraction or mixed number.

6. 0.8  
6. \( \frac{4}{5} \)  
6. \( 0.8 \)

7. -0.45  
7. \( -\frac{9}{20} \)  
7. \( -0.45 \)

8. 3.32  
8. \( \frac{83}{25} \)  
8. \( 3.\overline{32} \)

9. 0.175  
9. \( \frac{7}{40} \)  
9. \( 0.175 \)

10. 3.3333  
10. \( \frac{10}{3} \)  
10. \( 3.\overline{3333} \)

Write each fraction or mixed number as a repeating decimal.

12. \( \frac{4}{9} \)  
12. \( 0.\overline{4} \)  
12. \( 0.\overline{4} \)

13. \( 2\frac{5}{12} \)  
13. \( 2.\overline{416} \)  
13. \( 2.\overline{416} \)

14. \( \frac{15}{22} \)  
14. \( 0.\overline{67} \)  
14. \( 0.\overline{67} \)

15. \( 2\frac{7}{11} \)  
15. \( 2.\overline{7} \)  
15. \( 2.\overline{7} \)

16. \( -\frac{41}{333} \)  
16. \( -0.\overline{3} \)  
16. \( -0.\overline{3} \)

Write as a decimal. If a repeating decimal, round to the nearest hundredth.

18. \( 5\frac{2}{3} \)  
18. \( 5.6666666666666666 \ldots \)  
18. \( 5.\overline{66} \)  
18. \( 5.\overline{66} \)

19. \( -8\frac{9}{16} \)  
19. \( -8.5625 \)  
19. \( -8.\overline{5625} \)  
19. \( -8.\overline{5625} \)

20. \( \frac{22}{7} \)  
20. \( 3.1428571428571428 \ldots \)  
20. \( 3.\overline{142857} \)  
20. \( 3.\overline{142857} \)

21. \( \frac{1}{12} \)  
21. \( 0.08 \)  
21. \( 0.\overline{08} \)  
21. \( 0.\overline{08} \)

22. \( 3\frac{16}{45} \)  
22. \( 3.3777777777777777 \ldots \)  
22. \( 3.\overline{37} \)  
22. \( 3.\overline{37} \)

23. \( \frac{475}{80} \)  
23. \( 5.9375 \)  
23. \( 5.\overline{9375} \)  
23. \( 5.\overline{9375} \)

24. \( \frac{5}{11} \)  
24. \( 0.4545454545454545 \ldots \)  
24. \( 0.\overline{45} \)  
24. \( 0.\overline{45} \)

25. \( -\frac{65}{8} \)  
25. \( -8.125 \)  
25. \( -8.\overline{125} \)  
25. \( -8.\overline{125} \)

| 14 | 2 | 10 | 20 | 8 | 22 | 16 | 6 | 24 | 12 | 18 | 9 | 4 | 21 | 15 | 1 | 7 | 25 | 3 | 11 | 19 | 23 | 13 | 5 | 17 |

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Number Theory:
Fractions and Decimals
### Where Should You Take a Lost Salad?

Write the letter of each exercise in the box containing the number of the answer.

<table>
<thead>
<tr>
<th>Write the number in scientific notation.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E.</strong> 6,100,000,000 (world population on January 1, 2000)</td>
</tr>
<tr>
<td>6. $6.1 \times 10^9$</td>
</tr>
<tr>
<td><strong>D.</strong> 276,000,000,000,000 mi (distance from Earth to the North Star)</td>
</tr>
<tr>
<td>17. $2.76 \times 10^{14}$ mi</td>
</tr>
<tr>
<td><strong>T.</strong> 0.00074 cm (diameter of a red blood cell)</td>
</tr>
<tr>
<td>2. $7.4 \times 10^{-3}$ cm</td>
</tr>
<tr>
<td><strong>A.</strong> 0.0000000000000000003 g (mass of a water molecule)</td>
</tr>
<tr>
<td>8. $3 \times 10^{23}$ g</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Write the number in scientific notation.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>O.</strong> $29.5 \times 10^4$</td>
</tr>
<tr>
<td>2. $2.95 \times 10^5$</td>
</tr>
<tr>
<td><strong>D.</strong> $33.8 \times 10^{-4}$</td>
</tr>
<tr>
<td>1. $3.38 \times 10^{-2}$</td>
</tr>
<tr>
<td><strong>N.</strong> $94.44 \times 10^9$</td>
</tr>
<tr>
<td>11. $9.444 \times 10^8$</td>
</tr>
<tr>
<td><strong>T.</strong> $75 \times 10^{-9}$</td>
</tr>
<tr>
<td>19. $7.5 \times 10^{-11}$</td>
</tr>
</tbody>
</table>

Express each factor in scientific notation, then multiply. Express the product in scientific notation.

<table>
<thead>
<tr>
<th>Express each factor in scientific notation, then multiply. Express the product in scientific notation.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.</strong> (3,000,000)(20,000)</td>
</tr>
<tr>
<td>10. $6 \times 10^{11}$</td>
</tr>
<tr>
<td><strong>E.</strong> (45,000,000)(0.0018)</td>
</tr>
<tr>
<td>12. $8.1 \times 10^4$</td>
</tr>
<tr>
<td><strong>T.</strong> (0.00026)(0.000037)</td>
</tr>
<tr>
<td>11. $9.62 \times 10^{-8}$</td>
</tr>
<tr>
<td><strong>O.</strong> (900,000)(4000)</td>
</tr>
<tr>
<td>9. $3.6 \times 10^9$</td>
</tr>
<tr>
<td><strong>F.</strong> (85,000)(5,200,000,000)</td>
</tr>
<tr>
<td>7. $4.42 \times 10^{11}$</td>
</tr>
<tr>
<td><strong>H.</strong> (0.04)(0.0007)</td>
</tr>
<tr>
<td>14. $2.8 \times 10^{-4}$</td>
</tr>
<tr>
<td><strong>S.</strong> (6000)(0.00000006)</td>
</tr>
<tr>
<td>3. $3.6 \times 10^{-3}$</td>
</tr>
<tr>
<td><strong>D.</strong> (0.00058)(93,000,000)</td>
</tr>
<tr>
<td>23. $5.394 \times 10^4$</td>
</tr>
</tbody>
</table>

Three numbers in scientific notation are given below. Answer the three questions about them.

- **a.** $3.2 \times 10^8$
- **b.** $6.4 \times 10^6$
- **c.** $3.2 \times 10^9$

**N.** How does **b** compare to **a**?

**O.** How does **c** compare to **a**?

**S.** How does **a** compare to **c**?

- 20. 10 times larger
- 18. half as large
- 16. twice as large
- 10. $\frac{1}{10}$ as large
Why Won't Ms. Snug Let Her Toddler Go to the Movies?

Divide each number line as indicated. Label each point. Then write the letter of each exercise above the number line at the corresponding point.

Halves:
- E -1/2
- S 4/2
- A 2/2
- S -1 1/2
- Y 3/2
- S 1/2
- H -2/2

Thirds:
- T -2/3
- S 5/3
- H -4/3
- E 2/3
- T -1 2/3
- I 1/3
- A -3/3
- H 1/3

Fourths:
- O 2/4
- G 8/4
- O -3/4
- U 4/4
- T -7/4
- Y 0/4
- O -1 1/4
- N 6/4

Fifths:
- E 1/5
- O -8/5
- H 6/5
- A -3/5
- E 13/5
- T -10/5
- F -5/5
- T 4/5
- C -1/5

Eighths:
- O 4/8
- E -9/8
- R 7/8
- E -1 14/8
- D 13/8
- L -6/8
- W 1/8
- R -15/8
- L 1 2/8

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Fractions: Fractions on the Number Line
How Did They Catch the Guy Who Robbed a Bunch of People on Mount Everest?

Write the letter of each exercise in the box containing the answer. Answers for the top half of the page are in the top row of boxes.

Simplify.

E \( \frac{7}{10} + \frac{1}{10} \)

H \( \frac{11}{12} - \frac{7}{12} \)

R \( \frac{-3}{8} + \frac{5}{8} \)

E \( \frac{-2}{9} + \frac{-4}{9} \)

T \( \frac{6}{11} - \frac{8}{11} \)

U \( \frac{-11}{15} + \frac{2}{15} \)

D \( \frac{13}{6} - \frac{5}{6} \)

E \( \frac{-9}{10} - \frac{7}{10} \)

O \( \frac{-1}{16} + \frac{25}{16} \)

E \( \frac{2x}{7} + \frac{3x}{7} \)

R \( \frac{7x}{8} - \frac{x}{8} \)

H \( \frac{3x}{20} - \frac{17x}{20} \)

T \( \frac{-4}{5n} + \frac{7}{5n} \)

N \( \frac{-1}{4n} - \frac{9}{4n} \)

T \( \frac{-41}{12n} + \frac{5}{12n} \)

Solve.

T \( x = \frac{3}{4} - \frac{5}{4} \)

\( y = \frac{-4}{11} - \frac{9}{11} \)

E \( \alpha = -\frac{1}{6} + \frac{13}{6} \)

B \( n + \frac{1}{5} = \frac{4}{5} \)

E \( k - \frac{5}{8} = \frac{1}{8} \)

C \( m + \frac{10}{3} = \frac{2}{3} \)

O \( t - \frac{7}{15} = -\frac{2}{15} \)

C \( u + \frac{4}{7} = -\frac{3}{7} \)

E \( x - \frac{3}{100} = \frac{37}{100} \)

H \( v + \frac{1}{9} = \frac{40}{9} \)

F \( h - \frac{5}{12} = -\frac{25}{12} \)

S \( y + 4 = \frac{1}{2} \)

M \( n + \frac{1}{10} = 1 \)

N \( w - 1 = -\frac{7}{8} \)

L \( q - \frac{1}{20} = -1 \)

\( 3\frac{1}{2} - 2\frac{2}{3} - \frac{2}{5} + \frac{1}{8} + 2 + 1\frac{1}{4} + \frac{1}{3} - 1\frac{2}{3} - \frac{1}{5} + \frac{1}{2} + 4\frac{1}{3} + \frac{3}{4} + 3\frac{2}{3} - 1 - 1\frac{19}{20} - 1\frac{2}{11} - \frac{9}{10} + 3\frac{5}{5} \)
# Why Does the President Put Vegetables in His Blender?

Do each exercise mentally and circle the best answer. Write the letter of this answer in the box containing the exercise number.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Which of these fractions equals $\frac{1}{2}$?</td>
<td>C. $\frac{7}{15}$, R. $\frac{8}{16}$, K. $\frac{9}{17}$</td>
</tr>
<tr>
<td>2</td>
<td>Which of these fractions equals $-\frac{1}{2}$?</td>
<td>V. $-\frac{10}{19}$, L. $\frac{11}{22}$, E. $-\frac{9}{18}$</td>
</tr>
<tr>
<td>3</td>
<td>Which of these fractions equals $-1$?</td>
<td>F. $\frac{12}{12}$, S. $-\frac{12}{12}$, Y. $-\frac{12}{12}$</td>
</tr>
<tr>
<td>4</td>
<td>Which of these fractions is closest to $\frac{1}{2}$?</td>
<td>U. $\frac{1}{5}$, I. $\frac{5}{12}$, M. $\frac{8}{9}$</td>
</tr>
<tr>
<td>5</td>
<td>Which of these fractions is closest to $-\frac{1}{2}$?</td>
<td>J. $-\frac{7}{8}$, B. $-\frac{3}{16}$, N. $-\frac{4}{7}$</td>
</tr>
<tr>
<td>6</td>
<td>Which of these fractions is closest to 1?</td>
<td>L. $\frac{5}{6}$, T. $\frac{11}{20}$, F. $-\frac{9}{10}$</td>
</tr>
<tr>
<td>7</td>
<td>Which of these fractions is closest to $-1$?</td>
<td>C. $\frac{99}{100}$, V. $-\frac{8}{15}$, O. $-\frac{9}{8}$</td>
</tr>
<tr>
<td>8</td>
<td>Which of these fractions is greatest?</td>
<td>H. $\frac{2}{15}$, K. $\frac{4}{9}$, N. $\frac{4}{9}$</td>
</tr>
<tr>
<td>9</td>
<td>Which of these fractions is greatest?</td>
<td>T. $\frac{1}{17}$, U. $\frac{1}{18}$, E. $\frac{1}{19}$</td>
</tr>
<tr>
<td>10</td>
<td>Which of these fractions is greatest?</td>
<td>I. $\frac{1}{4}$, A. $\frac{1}{5}$, Y. $\frac{1}{6}$</td>
</tr>
<tr>
<td>11</td>
<td>Which of these fractions is smallest?</td>
<td>J. $-\frac{1}{4}$, G. $-\frac{1}{5}$, D. $-\frac{1}{6}$</td>
</tr>
<tr>
<td>12</td>
<td>Which of these fractions is greatest?</td>
<td>K. $\frac{3}{4}$, V. $\frac{4}{5}$, O. $\frac{5}{6}$</td>
</tr>
<tr>
<td>13</td>
<td>Which of these expressions equals 1?</td>
<td>S. $-\frac{3}{4}$, M. $-\frac{4}{5}$, D. $-\frac{5}{6}$</td>
</tr>
<tr>
<td>14</td>
<td>Which of these expressions equals 1?</td>
<td>W. $-\frac{8}{9}$, I. $-\frac{9}{8}$, L. $\frac{0}{9}$</td>
</tr>
<tr>
<td>15</td>
<td>Which of these expressions equals $-1$?</td>
<td>T. $\frac{9}{10}$, G. $\frac{10}{11}$, C. $-\frac{11}{12}$</td>
</tr>
<tr>
<td>16</td>
<td>Which of these expressions equals $\frac{1}{2}$?</td>
<td>E. $\frac{19}{20}$, A. $-\frac{19}{20}$, I. $\frac{1}{19}$</td>
</tr>
<tr>
<td>17</td>
<td>Which of these expressions equals $-\frac{1}{2}$?</td>
<td>W. $-\frac{13}{12}$, H. $-\frac{11}{12}$, B. $-\frac{1}{12}$</td>
</tr>
<tr>
<td>18</td>
<td>Which of these expressions equals $-1$?</td>
<td>K. $\frac{1}{29}$, P. $\frac{1}{30}$, S. $-\frac{1}{30}$</td>
</tr>
<tr>
<td>19</td>
<td>The sum $\frac{3}{7} + \frac{4}{9}$ is</td>
<td>R. less than 1.</td>
</tr>
<tr>
<td>20</td>
<td>The sum $-\frac{7}{12} + \left(-\frac{9}{16}\right)$ is</td>
<td>P. less than $-1$.</td>
</tr>
<tr>
<td>21</td>
<td>The sum $-\frac{1}{9} + \frac{1}{10}$ is</td>
<td>W. less than 0.</td>
</tr>
<tr>
<td>22</td>
<td>M. greater than 1.</td>
<td>S. greater than 0.</td>
</tr>
</tbody>
</table>

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Mental Math: Comparing and Combining Fractions
How Could Goldilocks and The Big Bad Wolf Be in the Same House?

Find each answer in the answer columns. Write the letter of the answer in the box containing the problem number.

Simplify.

1. $\frac{3}{5} + \frac{-1}{3}$
2. $\frac{-1}{4} + \frac{-2}{3}$
3. $\frac{1}{2} - \frac{7}{10}$
4. $\frac{-3}{4} - \frac{1}{8}$
5. $\frac{5}{6} + \frac{4}{5}$
6. $\frac{-1}{3} + \frac{11}{15}$
7. $\frac{-5}{6} + \frac{-8}{9}$
8. $\frac{7}{8} - \frac{2}{3}$
9. $\frac{3}{10} + \frac{-47}{100}$
10. $\frac{-7}{9} + \frac{3}{4}$
11. $\frac{-5}{12} - \frac{5}{6}$
12. $\frac{2}{5} + \frac{7}{8}$
13. $\frac{1}{3} - \frac{9}{11}$
14. $\frac{1}{2} + \frac{2}{3} - \frac{5}{12}$
15. $1 - \frac{1}{16}$

Solve.

16. A triangular course for a canoe race is marked with buoys. The first leg is $\frac{3}{10}$ mi, the second leg is $\frac{1}{2}$ mi, and the third leg is $\frac{2}{5}$ mi. How long is the race?

17. Janis jogs around a rectangular park that is $\frac{3}{5}$ mi long and $\frac{1}{4}$ mi wide. How far is it around the park?

18. Rimshot bought two equal-sized pizzas. He cut the first one into 8 equal pieces and ate three of them. Then he cut the other pizza into 6 equal pieces and ate one of them. What fraction of a whole pizza did he eat altogether?

19. Karina bought a pizza that was cut into 8 equal pieces. She ate half of one piece. What fraction of the whole pizza did she eat?
Why Did Dorf Go “BUZZ, BUZZ” in Science Class?

Choose the correct answer for each exercise and circle the letter pair next to it. Write the upper case letter in the box containing the lower case letter.

1 \( \frac{n}{2} + \frac{n}{5} \)  
2 \( \frac{n}{8} + \frac{-2n}{3} \)  
3 \( \frac{-3n}{4} - \frac{2n}{7} \)  
4 \( \frac{5n}{12} + \frac{n}{4} \)  
5 \( \frac{2n}{5} - \frac{23n}{20} \)  
6 \( \frac{11n}{6} - \left( \frac{-4n}{9} \right) \)  
7 \( \frac{7}{mn} - \frac{2}{m} \)  
8 \( \frac{-5}{3n} + \frac{4}{9n} \)  
9 \( \frac{-1}{12a} - \frac{7}{6a} \)  
10 \( \frac{15}{a} + \frac{2}{b} \)  
11 \( \frac{3}{10} - \frac{8}{a} \)  
12 \( \frac{11}{ab} - \frac{-4}{5ab} \)  
13 \( \frac{7}{2a} + \frac{4}{b} \)  
14 \( \frac{-6}{a} - \frac{20}{3b} \)  
15 \( \frac{-2a}{25} + \frac{9b}{10} \)  
16 \( \frac{5}{a} + \frac{a}{7} \)  

answers 1-8  
answers 9-16  

r • E \( \frac{7 - 2n}{mn} \)  
o • P \( \frac{6a - 40}{10a} \)  
s • O \( \frac{-7}{9n} \)  
q • D \( \frac{-4a + 45b}{50} \)  
t • T \( \frac{2n}{3} \)  
l • R \( \frac{47}{5ab} \)  
k • E \( \frac{7n}{10} \)  
f • S \( \frac{15b + 2a}{ab} \)  
t • D \( \frac{-7n}{24} \)  
d • W \( \frac{7b + 8a}{2ab} \)  
h • A \( \frac{-11}{9n} \)  
m • O \( \frac{-6a + 27b}{50} \)  
h • T \( \frac{n}{4} \)  
b • E \( \frac{5}{4a} \)  
n • S \( \frac{41n}{18} \)  
q • G \( \frac{-12b - 40a}{3ab} \)  
d • G \( \frac{9}{mn} \)  
o • T \( \frac{59}{5ab} \)  
p • U \( \frac{-13n}{24} \)  
j • L \( \frac{14b + 4a}{2ab} \)  
a • H \( \frac{-3n}{4} \)  
l • E \( \frac{-18b - 20a}{3ab} \)  
a • T \( \frac{35 + 3a}{7a} \)  
sl • N \( \frac{3a - 80}{10a} \)  

abcdefghijklmnopqrstuvwxyz
## Did You Hear About . . .

<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>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>??</td>
<td>??</td>
</tr>
</tbody>
</table>

Find each answer in the answer column. Write the word next to the answer in the box containing the problem number.

### Simplify.

1. \(2 \frac{2}{3} - 1\frac{1}{2}\)
2. \(-4\frac{1}{2} + \frac{3}{10}\)
3. \(-3\frac{1}{3} - 2\frac{3}{4}\)
4. \(3\frac{5}{8} + (-5\frac{1}{4})\)
5. \(5\frac{1}{2} + \frac{4}{9}\)
6. \(-4\frac{3}{5} + (-2\frac{2}{3})\)

### Solve.

10. \(x + 4\frac{1}{5} = 7\frac{7}{10}\)
11. \(3\frac{3}{4} + t = -2\frac{1}{6}\)
12. \(n - 5\frac{5}{9} = -8\frac{1}{3}\)

### Word Problems

13. Mr. Glock's gas tank holds 16\(\frac{1}{2}\) gal when full. When Mr. Glock drove into a gas station, the tank contained 4\(\frac{2}{5}\) gal. How much gas was needed to fill the tank?

14. A cabinet has shelves that are 12\(\frac{1}{2}\) in. apart. On one shelf, Katherine stacked a CD player that is 4\(\frac{5}{8}\) in. high on top of an amplifier that is 6\(\frac{3}{4}\) in. high. How much space was left above the CD player?

15. A sheet of paper is 8\(\frac{1}{2}\) in. wide and 11 in. long. The sheet is printed with a margin 1\(\frac{1}{4}\) in. wide on all four sides. Find the perimeter of the printed part of the page.
**Where Did Jack Frost Catch a Gold?**

Simplify each expression mentally, write your answer, 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.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a. ( \frac{1}{3} \cdot 27 \text{ cm} )</td>
<td>answers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. ( \frac{1}{8} \cdot 32 \text{ cm} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. ( \frac{1}{7} \text{ of 77 cm} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. ( \frac{1}{12} \text{ of 60 cm} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>a. ( \frac{1}{5} \text{ of 40 lb} )</td>
<td>answers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. ( \frac{2}{5} \text{ of 40 lb} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. ( \frac{3}{5} \text{ of 40 lb} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. ( \frac{4}{5} \text{ of 40 lb} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>a. ( \frac{1}{4} \cdot 36 \text{ in.} )</td>
<td>answers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. ( \frac{3}{4} \cdot 36 \text{ in.} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. ( \frac{1}{6} \text{ of 30 in.} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. ( \frac{5}{6} \text{ of 30 in.} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>a. ( \frac{2}{15} \text{ of 60 min} )</td>
<td>answers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. ( \frac{7}{9} \cdot 45 \text{ min} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. ( \frac{5}{8} \text{ of 160 min} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. ( \frac{3}{10} \cdot 150 \text{ min} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>a. ( \frac{5}{12} \text{ of 36 cows} )</td>
<td>answers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. ( \frac{2}{7} \text{ of 210 cows} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. ( \frac{8}{11} \text{ of 66 cows} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. ( \frac{4}{15} \text{ of 150 cows} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 6 | a. \( \frac{1}{3} \cdot \frac{1}{4} \text{ mi} \) | answers |   |   |   |
|   | b. \( \frac{1}{8} \text{ of } \frac{1}{2} \text{ mi} \) |   |   |   |   |
|   | c. \( \frac{3}{5} \cdot \frac{1}{8} \text{ mi} \) |   |   |   |   |
|   | d. \( \frac{7}{10} \text{ of } \frac{3}{4} \text{ mi} \) |   |   |   |   |

| 7 | a. \( \frac{1}{3} \text{ of 10 kg} \) | answers |   |   |   |
|   | b. \( \frac{1}{5} \cdot 12 \text{ kg} \) |   |   |   |   |
|   | c. \( \frac{1}{8} \text{ of 5 kg} \) |   |   |   |   |
|   | d. \( \frac{1}{12} \cdot 7 \text{ kg} \) |   |   |   |   |

| 8 | a. \( \frac{1}{2} \cdot \frac{1}{3} \cdot 30 \text{ ft} \) | answers |   |   |   |
|   | b. \( \frac{1}{5} \text{ of } \frac{1}{4} \text{ of 80 ft} \) |   |   |   |   |
|   | c. \( \frac{3}{8} \cdot \frac{1}{2} \cdot 32 \text{ ft} \) |   |   |   |   |
|   | d. \( \frac{1}{3} \text{ of } \frac{7}{10} \text{ of 90 ft} \) |   |   |   |   |

| 9 | a. \( 9 \cdot \frac{1}{4} \text{ h} \) | answers |   |   |   |
|   | b. \( 15 \cdot \frac{1}{2} \text{ h} \) |   |   |   |   |
|   | c. \( 5 \cdot \frac{5}{12} \text{ h} \) |   |   |   |   |
|   | d. \( 7 \cdot \frac{9}{10} \text{ h} \) |   |   |   |   |

| 10 | a. \( \frac{1}{4} \text{ of 9 h} \) | answers |   |   |   |
|    | b. \( \frac{1}{2} \text{ of 15 h} \) |   |   |   |   |
|    | c. \( \frac{5}{12} \text{ of 5 h} \) |   |   |   |   |
|    | d. \( \frac{9}{10} \text{ of 7 h} \) |   |   |   |   |

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**Mental Math: Multiplication with Fractions**
Why Did Sparkle Glitz Put Lipstick on Her Forehead?

Simplify each expression. Write the letter of the exercise in the box that contains the number of the answer.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Expression</th>
<th>Answers</th>
<th>Exercise</th>
<th>Expression</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$\frac{2}{5} \cdot \frac{3}{4}$</td>
<td>8 $\frac{5}{12}$</td>
<td>A $\frac{7}{12}$</td>
<td>of 9</td>
<td>17 $-5\frac{3}{5}$</td>
</tr>
<tr>
<td>1</td>
<td>$-\frac{3}{7} \cdot \frac{1}{6}$</td>
<td>21 $-\frac{3}{4}$</td>
<td>D $\frac{3}{8} \cdot (-20)$</td>
<td>29 $-7\frac{1}{2}$</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>$-\frac{5}{8} \cdot (-\frac{2}{3})$</td>
<td>10 $-\frac{3}{20}$</td>
<td>R $-36 \cdot (-\frac{4}{9})$</td>
<td>16 $7\frac{1}{5}$</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>$\frac{3}{5} \cdot (-\frac{15}{16})$</td>
<td>3 $\frac{3}{10}$</td>
<td>E $\frac{4}{5}$ of $\frac{10}{3}$</td>
<td>18 $2\frac{2}{3}$</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>$\frac{5}{12}$ of $\frac{8}{15}$</td>
<td>27 $-\frac{9}{16}$</td>
<td>H $(\frac{-20}{7})(\frac{7}{5})$</td>
<td>11 $6\frac{1}{2}$</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>$-\frac{4}{15} \cdot \frac{9}{16}$</td>
<td>4 $\frac{2}{3}$</td>
<td>A $(\frac{-3}{10})(-24)$</td>
<td>2 $-4$</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>$(\frac{2}{3})^2$</td>
<td>19 $\frac{2}{9}$</td>
<td>24 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>$(-\frac{7}{10})^2$</td>
<td>22 $-\frac{19}{16}$</td>
<td>E $\frac{5n^2}{2} \cdot \frac{1}{4n}$</td>
<td>26 $-\frac{2}{15}n$</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>$-(-\frac{5}{4})^2$</td>
<td>1 $\frac{4}{9}$</td>
<td>N $\frac{11}{10n^2} \cdot \frac{6n}{11}$</td>
<td>14 $\frac{2}{3n}$</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>$\frac{3x}{8} \cdot \frac{4}{7}$</td>
<td>25 $7\frac{1}{3}$</td>
<td>P $\frac{5}{16}$ of 40$n$</td>
<td>7 $\frac{3n^2}{8}$</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>$-\frac{2x}{9} \cdot 6$</td>
<td>5 $-\frac{4x}{3}$</td>
<td>28 $\frac{3}{5n}$</td>
<td>21 $\frac{2n^2}{7}$</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>$-\frac{25x}{3} \cdot (-\frac{4}{5x})$</td>
<td>15 $6\frac{2}{3}$</td>
<td>N $(\frac{-7n}{12})(\frac{-9n}{14})$</td>
<td>3 $\frac{5n}{8}$</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>$\frac{3x}{14}$</td>
<td>4 $-\frac{3x}{2}$</td>
<td>M $\frac{-2}{3} \cdot \frac{1}{5}n$</td>
<td>17 $n$</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>20 $\frac{25n}{2}$</td>
<td></td>
</tr>
</tbody>
</table>

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Fractions:
Multiplication of Fractions
How Are Dogcatchers Paid?

Find each correct answer at the bottom of the page and cross out the letter above it. When you're finished, the answer to the title question will remain.

1 \(2 \frac{1}{2} \cdot 4 \frac{3}{5}\) 
2 \(-3 \frac{1}{3} \cdot 5 \frac{1}{4}\) 
3 \((-3 \frac{3}{4}) (-2 \frac{3}{10})\)

4 \(1 \frac{7}{8} \cdot (-13 \frac{1}{3})\) 
5 \(-6 \frac{2}{5} \cdot \left(-\frac{7}{12}\right)\) 
6 \(-2 \frac{1}{10} \cdot 1 \frac{2}{7} \cdot 4 \frac{1}{6}\)

7 Water flows out of a shower head at a rate of \(1 \frac{2}{3}\) gallons per minute. How much water will be used for a 7\(\frac{1}{2}\)-min shower?

8 South Park is in the shape of a rectangle \(2 \frac{1}{2}\) mi long and \(1 \frac{7}{10}\) mi wide. What is the area of the park?

9 \((-4 \frac{1}{2})^2\) 
10 \(-8 \frac{1}{3} \cdot 4\) 
11 \((-3 \frac{1}{4}) (-2 \frac{2}{5}) (-2 \frac{1}{3})\)

12 \(5 \frac{5}{6} \cdot 1 \frac{1}{3} \cdot (-\frac{4}{7})\) 
13 \(\left(5 \frac{5}{8}\right) \left(2 \frac{2}{3}\right)^2\) 
14 \((-2 \frac{1}{7}) (-\frac{7}{15}) (9)\)

15 Boy Scout Troop 2 went backpacking in the Sierras. The scouts hiked \(5 \frac{1}{2}\) hours each day for 4 days. If their average speed was \(1 \frac{3}{4}\) mph, how far did they hike altogether?

16 A new section of freeway will be \(6 \frac{3}{5}\) mi long. So far, one-sixth of the new section has been completed. How many more miles must be built to complete the project?
Why Do Most Newspaper Editors Quit Working During An Earthquake?

Complete the chart below by writing a fraction equivalent for each percent. Then do each exercise mentally. Write the letter of the exercise in the box above its answer.

<table>
<thead>
<tr>
<th>50% =</th>
<th>33 1/3% =</th>
<th>25% =</th>
<th>20% =</th>
<th>12 1/2% =</th>
<th>10% =</th>
<th>1% =</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>50% of 70 cm</td>
<td>Y</td>
<td>12 1/2% of 240 kg</td>
<td>Y</td>
<td>4 tons is what percent of 40 tons?</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>25% of 36 cm</td>
<td>A</td>
<td>1% of 450 kg</td>
<td>H</td>
<td>15 min is what percent of an hour?</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>33 1/3% of 600 cm</td>
<td>R</td>
<td>100% of 90 kg</td>
<td>O</td>
<td>8 donuts is what percent of two dozen donuts?</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>10% of 83 cm</td>
<td>U</td>
<td>200% of 90 kg</td>
<td>V</td>
<td>7.5 cm is what percent of 750 cm?</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>20% of 60 cm</td>
<td>C</td>
<td>150% of 90 kg</td>
<td>N</td>
<td>15 volts is what percent of 120 volts?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10%</th>
<th>200 cm</th>
<th>180 kg</th>
<th>15 cm</th>
<th>135 kg</th>
<th>35 cm</th>
<th>12 1/2%</th>
<th>12 cm</th>
<th>120 kg</th>
<th>25%</th>
<th>4.5 kg</th>
<th>1%</th>
<th>8.3 cm</th>
<th>30%</th>
<th>30 kg</th>
<th>33 1/3%</th>
<th>9 cm</th>
<th>90 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>10% of $15</td>
<td>E</td>
<td>25% of 1000 yd</td>
<td>G</td>
<td>72° is what percent of 360°?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>20% of $15</td>
<td>A</td>
<td>12 1/2% of 440 yd</td>
<td>N</td>
<td>200 lb is what percent of a ton?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>1% of $15</td>
<td>O</td>
<td>50% of 0.5 yd</td>
<td>T</td>
<td>4 ounces is what percent of a pound?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>33 1/3% of $15</td>
<td>U</td>
<td>10% of 60 yd</td>
<td>K</td>
<td>500 meters is what percent of a kilometer?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>200% of $15</td>
<td>T</td>
<td>5% of 60 yd</td>
<td>D</td>
<td>52 cards is what percent of 52 cards?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ratio, Proportion, and Percent: Using Mental Math to Find a Percent or Percent of a Number

5.5
How Does the Old Moose Feel About His Son's CD of HARD ROCK Hits?

Cross out the letter pair next to each correct answer. For each letter pair you DON'T cross out, write the upper case letter in the box containing the lower case letter. Some answers are rounded.

1 29% of 18 cm 2 7% of 58 cm f.V 4.06 cm c.P 1.52 cm
3 4.5% of 66 cm 4 0.8% of 190 cm h.E 1.76 cm m.K 5.22 cm
5 60% of 52 ft 6 3% of 360 ft k.J 4.18 ft o.D 11.22 ft
7 132% of 8.5 ft 8 8 1/2% of 49.2 ft f.A 9.6 ft s.L 10.8 ft
9 15.6% of 1.4 kg 10 0.75% of 1600 kg o.E 0.29 kg e.T 7.51 kg
11 288% of 3 kg 12 5 1/4% of 92 kg b.R 12 kg a.C 8.64 kg
13 56% of 740 cats 14 64.5% of 2900 cats t.N 263 cats g.R 414 cats
15 325% of 81 cats 16 110.4% of 680 cats e.H 751 cats i.S 1789 cats
17 0.625% of $800 18 2 3/4% of $19.66 k.M $0.68 t.E $0.54
19 17.8% of $33.50 20 100% of $1.44 p.D $5.96 b.L $5.49

21 Dr. Pepper paid $1160 for a new sound system. She also paid a 7.5% sales tax. What was the total cost including the tax?
22 The regular price for a pair of XLR-8 skis is $749, but they are on sale at a 30% discount. What is the sale price for the skis?
23 Julie Jungle wrote a book. She earns a royalty of 6% of total sales. Suppose 3000 copies are sold at $15.95 each. How much does Julie earn?

24 A copier is set to enlarge a drawing to 128% of the original size. If the original drawing is 5.5 in. wide, how wide will the copy be?
25 One wall of Kevin’s living room measures 8 ft by 15 ft. Windows make up 22% of the surface area. What is the window area?
26 Mr. and Ms. Doubloon had a taxable income of $52,000. The income tax rate is 10% of the first $14,000 plus 15% of the rest. How much tax will the Doubloons pay?
What Happens When Cupid Shoots an Arrow?

Cross out the letter next to each correct answer. When you finish, the answer to the title question will remain. Some answers are rounded.

1. 50 tons is what percent of 85 tons?  
2. What percent of 9.4 cm is 3.5 cm?

3. Find 62.5% of 5280 ft.  
4. What is 130% of 56 g?

5. 32% of what weight is 60 oz?  
6. 90 km is 8% of what distance?

7. 220 volts is what percent of 120 volts?  
8. Find 6.7% of 830 g.

9. 9% of what length is 180 ft?  
10. 445 out of 1000 students is what percent?

11. What is 30% of 360°?  
12. 25 aardvarks is what percent of 80 aardvarks?

13. 40% of what distance is 6.4 mi?  
14. Find 7.25% of $499.

15. 6 out of 750 computers is what percent?  
16. 24 cupcakes is 75% of what number of cupcakes?

17. 350% of 3.8 mi is what distance?  
18. $14.72 is what percent of $199.60?

19. 150% of what length is 96 cm?  
20. 144 elephants is 200% of how many elephants?
What Is Bad Forwards But Good Backwards?

Cross out the letter above each correct answer (some are rounded).

1. Andrea has 380 songs stored on her iPod, organized into five categories. Based on the graph:
   a. How many songs are in the "Jazz" category?
   b. How many songs are in the "Country" category?
   c. What percent of the songs are in the "Hip Hop/Rap" category?

2. Oley Skotchgaard sells TV's. He earns a 4.5% commission on sales. If his sales last week were $9000, how much did Oley earn?

3. Olga Fjord sells computers. She earns a 4.5% commission on sales. How much must she sell in order to earn $9000?

4. Ms. Munch bought a watch with a regular price of $129. It was on sale at a 20% discount. There was a 6% tax on the sale price. How much did Ms. Munch spend to buy the watch?

5. A test consisted of 15 multiple-choice questions, 12 true-false questions, and 10 fill-in-the-blank questions. Robert got 8 questions wrong. What percent of his answers were correct?

6. A model of the Saturn V rocket is 1.77 m high. This height is 1.6% of the actual height of the rocket. What is the actual height of the Saturn V?

7. Lia had a 4-by-9-in. drawing enlarged. Both length and width were increased to 140% of the original size. Find the perimeter of the enlarged drawing.

8. Tower College has space for 740 new students. The college estimates that 45% of the students who are admitted will actually attend the college. How many students should be admitted?

9. An 8-by-15-ft wall has three windows. Each window measures 3 ft by 4 ft. The area of the three windows is what percent of the area of the entire wall (including the windows)?

10. Karen deposited $800 in an account that paid 3.2% simple interest. She made no deposits or withdrawals for 5 years.
   a. How much interest did Karen earn in 5 years?
   b. What was the value of Karen's account at the end of 5 years?

11. For each player in the table below, find what percent of his shots were baskets. What is the higher of the two shooting percentages?

<table>
<thead>
<tr>
<th>Player</th>
<th>Shots</th>
<th>Baskets</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ben</td>
<td>36</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Jerry</td>
<td>27</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Ratio, Proportion, and Percent: Solving Problems Involving Percent

5.8
Cumulative Test

Choose the best answer.

1. Which is a solution for the equation \( n - 45 = 12? \)
   - A \( n = 52 \)
   - B \( n = 57 \)
   - C \( n = 33 \)
   - D \( n = 37 \)

2. Solve \( n + 342 = 500. \)
   - F \( n = 158 \)
   - G \( n = 842 \)
   - H \( n = 258 \)
   - J \( n = 342 \)

3. Solve \( 12x = 108. \)
   - A \( x = 96 \)
   - B \( x = 9 \)
   - C \( x = 120 \)
   - D \( x = 1,296 \)

4. Solve \( 147 \div n = 21. \)
   - F \( n = 7 \)
   - G \( n = 3,087 \)
   - H \( n = 3 \)
   - J \( n = 169 \)

5. Divide \( 23.27 \div 3.58. \)
   - A \( 6.5 \)
   - B \( 0.65 \)
   - C \( 6.5 \)
   - D \( 650 \)

6. Which pair is equivalent fractions?
   - F \( \frac{3}{4}, \frac{12}{15} \)
   - G \( \frac{5}{6}, \frac{30}{35} \)
   - H \( \frac{1}{8}, \frac{4}{16} \)
   - J \( \frac{2}{3}, \frac{16}{24} \)

7. Solve \( n + \frac{3}{10} = 1. \)
   - A \( \frac{7}{10} \)
   - B \( \frac{10}{10} \)
   - C \( \frac{5}{7} \)
   - D \( \frac{1}{10} \)

8. Write \( 2,000,000 \) in scientific notation.
   - F \( 200 \times 10^4 \)
   - G \( 2.00 \times 10^4 \)
   - H \( 200 \times 10^5 \)
   - J \( 2.0 \times 10^6 \)

9. Evaluate \( 5 + 3 \times 4. \)
   - A 12
   - B 17
   - C 32
   - D 60

10. Which is true about an acute angle?
    - F It is exactly 90°.
    - G It is greater than 90°.
    - H It is less than 90°.
    - J It is exactly 180°.

11. Which ordered pair names point \( B \) on the graph?

    - A \((1, -1)\)
    - B \((-1, -3)\)
    - C \((-1, 1)\)
    - D \((1, 1)\)

12. Which property is represented?
    - 23 + 19 = 19 + 23
    - F Associative Property of Addition
    - G Commutative Property of Addition
    - H Associative Property of Multiplication
    - J Commutative Property of Multiplication

13. Evaluate \( r + 2 \) for \( r = 5. \)
    - A 3
    - B 5
    - C 7
    - D 25
14. Evaluate $3p - 5q$ for $p = 4$ and $q = 2$.
   F $-22$    H $-2$
   G $22$    J $2$

15. Which is true about parallel lines?
   A They intersect.
   B They form complementary angles.
   C They never intersect.
   D They form a right angle.

16. Identify the quadrilateral.
   F
   G
   H
   J

17. Identify the acute triangle.
   A
   B
   C
   D

18. Solve for $n$: $\frac{3}{4} = \frac{n}{5}$.
   F $n = 1.25$    H $n = 4$
   G $n = 6$    J $n = 3.75$

19. Which is equivalent to 3.05?
   A 3.05%    C 305%
   B 30.5%    D 0.0305%

20. 50 is 40% of what number?
   F 125    H 20
   G 100    J 80

21. Add $-29 + (-12)$.
   A $-17$    C 41
   B $-41$    D 17

22. Multiply $-32 \times (-8)$.
   F 4    H $-4$
   G $-256$    J 256

23. Which pair of numbers is not equivalent?
   A 1.04 and $1\frac{2}{5}$    C 1.25 and $1\frac{1}{4}$
   B 0.125 and $\frac{1}{8}$    D 12.5 and $12\frac{1}{2}$

24. Which group of numbers is in order from least to greatest?
   F 2.58, $2\frac{5}{8}$, 2.6, $2\frac{2}{3}$
   G $2\frac{2}{3}$, $2\frac{5}{8}$, 2.6, 2.58
   H $2\frac{5}{8}$, $2\frac{2}{3}$, 2.6, 2.58
   J 2.58, 2.6, $2\frac{5}{8}$, $2\frac{2}{3}$

25. Describe the relationship that exists between $a^2$ and $a^3$ if $a$ is a natural number.
   A $a^3$ is a times smaller than $a^2$.
   B $a^3$ is a times bigger than $a^2$.
   C The ratio of $a^3$ to $a^2$ is 3 to 2.
   D $a^3$ is 6 times bigger than $a^2$.

26. Which of the following numbers is written in scientific notation?
   F $200 \times 10^4$    H $20.0 \times 10^5$
   G $0.2 \times 10^4$    J $2.0 \times 10^6$
27. Write "the product of 3 and a number" as an algebraic expression.
   A 3n
   B 3 + n
   C 3 - n
   D 3 ÷ n

28. Which number is a solution of the equation \( n + 2 = 5 \)?
   F 3
   G -3
   H 7
   J -7

29. Determine which number is a solution of \( x - 28 = 46 \).
   A 1,288
   B 74
   C 18
   D 2

30. Solve the equation \( r + 12 = -11 \).
   F \( r = 132 \)
   G \( r = 1 \)
   H \( r = -1 \)
   J \( r = -23 \)

31. Solve the equation \( t ÷ 5 = 65 \).
   A \( t = 13 \)
   B \( t = 325 \)
   C \( t = 60 \)
   D \( t = 70 \)

32. Solve the equation \( 11z = 132 \).
   F \( z = 121 \)
   G \( z = 143 \)
   H \( z = 12 \)
   J \( z = 1,452 \)

33. Identify the mean of the following data set.
   24, 29, 23, 27, 29, 29,
   21, 20, 25, 26, 22
   A 23
   B 24
   C 25
   D 29

34. Which number is solution of
   \( 45 = n - 15 \)?
   F 15
   G 30
   H 45
   J 60

35. Solve the equation \( 23 + b = 35 \).
   A \( b = 12 \)
   B \( b = 23 \)
   C \( b = 48 \)
   D \( b = 805 \)

36. Solve the equation \( 4p = 32 \)
   F \( p = 4 \)
   G \( p = 8 \)
   H \( p = 28 \)
   J \( p = 36 \)
37. According to the bar graph below, how much more water is consumed than milk?

Beverages Consumed

<table>
<thead>
<tr>
<th>Beverage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>40</td>
</tr>
<tr>
<td>Milk</td>
<td>30</td>
</tr>
<tr>
<td>Juice</td>
<td>20</td>
</tr>
<tr>
<td>Coffee</td>
<td>10</td>
</tr>
<tr>
<td>Tea</td>
<td>20</td>
</tr>
</tbody>
</table>

A 20 servings   C 40 servings
B 25 servings   D 45 servings

38. Identify what percent of the students use a pen rather than a pencil.

Writing Implement Used

<table>
<thead>
<tr>
<th>Implement</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erasable-Pen</td>
<td>15%</td>
</tr>
<tr>
<td>Ballpoint Pen</td>
<td>30%</td>
</tr>
<tr>
<td>Felt-Tip Pen</td>
<td>20%</td>
</tr>
<tr>
<td>Ink Pen</td>
<td>15%</td>
</tr>
<tr>
<td>Pencil</td>
<td>35%</td>
</tr>
</tbody>
</table>

F 35%            H 65%
G 50%            J 80%

39. According to the line graph below, how much more did it cost for a ski lift ticket in 2000 than in 1995?

Year vs. Lift Ticket Prices

<table>
<thead>
<tr>
<th>Year</th>
<th>Prices ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>29</td>
</tr>
<tr>
<td>1980</td>
<td>33</td>
</tr>
<tr>
<td>1985</td>
<td>37</td>
</tr>
<tr>
<td>1990</td>
<td>41</td>
</tr>
<tr>
<td>1995</td>
<td>43</td>
</tr>
<tr>
<td>2000</td>
<td>45</td>
</tr>
</tbody>
</table>

A $3 more
B $5 more
C $10 more
D $15 more

40. Find the value of $3^2$.

F 5
G 6
H 9
J 27
**Cumulative Test**

Choose the best answer.

1. Write an algebraic expression for "the product of a number and 17."
   - A \( n + 17 \)
   - B \( 17n \)
   - C \( n - 17 \)
   - D \( n ÷ 17 \)

2. Which is a solution for the equation \( n - 3.2 = 15 \)?
   - F \( n = 11.8 \)
   - G \( n = 12.8 \)
   - H \( n = 18.2 \)
   - J \( n = 19.2 \)

3. Solve \( \frac{x}{9} = -4 \).
   - A \( x = -36 \)
   - B \( x = -\frac{4}{9} \)
   - C \( x = \frac{4}{9} \)
   - D \( x = 36 \)

4. Solve \( n ÷ 24 = 25 \).
   - F \( n = 600 \)
   - G \( n = 480 \)
   - H \( n = 300 \)
   - J \( n = 240 \)

5. Write an algebraic expression for "21 less than a number divided by 4."
   - A \( \frac{4}{n} - 21 \)
   - B \( \frac{21}{n} - 4 \)
   - C \( \frac{n}{21} - 4 \)
   - D \( \frac{n}{4} - 21 \)

6. Which is a solution for the equation \( 4n + 34 - n = 94 \)?
   - F \( n = 20 \)
   - G \( n = 56 \)
   - H \( n = 12 \)
   - J \( n = 36 \)

7. Solve \( \frac{1}{3}b = \frac{2}{3} \).
   - A \( \frac{1}{2} \)
   - B \( 2 \)
   - C \( \frac{1}{3} \)
   - D \( 3 \)

8. Which pair of fractions is not equivalent?
   - F \( \frac{6}{9} \) and \( \frac{18}{27} \)
   - G \( \frac{9}{12} \) and \( \frac{12}{16} \)
   - H \( \frac{8}{12} \) and \( \frac{24}{30} \)
   - J \( \frac{8}{10} \) and \( \frac{12}{15} \)

9. Solve \( 15x = (200 ÷ 5) + 50 \).
   - A \( x = 3 \)
   - B \( x = 6 \)
   - C \( x = 75 \)
   - D \( x = 1,350 \)

10. Solve \( n ÷ (82 ÷ 41) + 2 = 72.6 \).
    - F \( n = 35.3 \)
    - G \( n = 72.6 \)
    - H \( n = 141.2 \)
    - J \( n = 145.2 \)

11. Write "the product of 3 and the sum of a number and 5" as an algebraic expression.
    - A \( 3(n + 5) \)
    - B \( 3n + 5 \)
    - C \( 3(n - 5) \)
    - D \( 3 \cdot 5 + n \)

12. Which group of numbers is in order from least to greatest?
    - F \( 2.58, \frac{5}{8}, 2.6, \frac{2}{3} \)
    - G \( 2\frac{2}{3}, \frac{5}{8}, 2.6, 2.58 \)
    - H \( 2\frac{5}{8}, 2\frac{2}{3}, 2.6, 2.58 \)
    - J \( 2.58, 2.6, \frac{5}{8}, \frac{2}{3} \)
Cumulative Test

13. Which number is a solution of \(8n + n - 2 = 16\)?
   - A 2
   - B 3
   - C -2
   - D -3

14. Solve the equation \(\frac{y}{6} = 5\).
   - F 5
   - G 6
   - H 10
   - J 30

15. Find the value of \((5^2 + 7^3)^0\).
   - A 368
   - B 31
   - C 1
   - D 0

16. Find the missing number in
   \(? \times 10^7 = 50,300,000\).
   - F 5
   - G 5.03
   - H 53
   - J 50.3

17. Which expression has a value of 54?
   - A \(2^3 + 4 \cdot 5 \cdot 6\)
   - B \(2^3 \cdot 4 - 5 \cdot 6\)
   - C \(2^3 + 5 \cdot 4 - 6\)
   - D \((2^3 + 4) \cdot 5 - 6\)

18. Add \(3 + (-2) + 7\).
   - F 12
   - G 9
   - H 8
   - J 2

19. Evaluate the expression \(x + y\) for \(x = -3\) and \(y = 7\).
   - A 4
   - B 5
   - C 10
   - D 21

20. Solve the equation \(5c = 30\).
   - F \(c = 150\)
   - G \(c = 25\)
   - H \(c = 6\)
   - J \(c = 4\)

21. Subtract \(2 - (-6)\)
   - A 8
   - B 6
   - C -4
   - D -8

22. Find the product of \(3 \cdot -2\).
   - F -6
   - G -1
   - H 1
   - J 6

23. Evaluate the expression \(x - y\) for \(x = -3\) and \(y = 7\).
   - A 4
   - B -4
   - C -10
   - D -21

24. Evaluate the expression \(x \cdot y\) for \(x = -5\) and \(y = 6\).
   - F 30
   - G 1
   - H -30
   - J -1

25. Estimate \(2.78 + 3.14 - 4.185\) by rounding.
   - A 3
   - B 2
   - C 1
   - D 0

26. Subtract \(8 - 3.8\).
   - F 11.8
   - G 5.8
   - H 4.2
   - J 3.2

27. Multiply \((-0.3)^2 \cdot (-3.3)\).
   - A -0.297
   - B -0.297
   - C 0.297
   - D 0.0297

28. Evaluate \(2.56 \div 0.64 \div 0.02\).
   - F 0.08
   - G 20
   - H 80
   - J 200
29. Laura paid $9.35 for 3.4 pounds of ground beef. How much does one pound of ground beef cost?
   A $31.79
   B $5.85
   C $3.00
   D $2.75

30. Combine like terms
   \(3a + 4a^2 - 2a + 7a^2\).
   F \(12a^2\)
   G \(2a + 11a^2\)
   H \(a + 11a^2\)
   J \(5a + 11a^2\)

31. Find the value of \(2^5\).
   A 10
   B 16
   C 32
   D 64

32. Write 31,400,000,000 in scientific notation.
   F \(314 \times 10^8\)
   G \(3.14 \times 10^{11}\)
   H \(31.4 \times 10^9\)
   J \(3.14 \times 10^{10}\)

33. Evaluate \(2 + 5 \cdot 3 - 4^2\).
   A 0
   B 1
   C 5
   D 289

34. What is the first prime number?
   F 3
   G 2
   H 1
   J 0

35. Find the greatest common factor (GCF) of 24 and 54.
   A 12
   B 6
   C 3
   D 2

36. Find the least common multiple (LCM) of 24 and 54.
   F 1,296
   G 216
   H 108
   J 6

37. Evaluate \(r + 7\) for \(r = -2\).
   A -9
   B -5
   C 5
   D 9

38. Evaluate \(3p - 5q\) for \(p = 7\) and \(q = -8\).
   F -19
   G -3
   H 19
   J 61
39. Write "3 times the sum of a number and 6" as an algebraic expression.
   A  $3(n + 6)$
   B  $3n + 6$
   C  $3 + n + 6$
   D  $3 + 6n$

40. Which number is a solution of the equation $n + 12 = -5$?
   F  $-17$
   G  $-7$
   H  $7$
   J  $17$
Choose the best answer.

8. Evaluate \( n - 12 \) for \( n = 21. \)
   
   \( F \) 7  \( H \) 33
   \( G \) 9  \( J \) 252

9. Write "the difference of 5 and a number" as an algebraic expression.
   
   \( A \) \( n - 5 \)  \( C \) \( 5 - n \)
   \( B \) \( 5 + n \)  \( D \) \( n + 5 \)

10. Combine like terms in the expression \( a + b - 3a - 5b. \)

   \( F \) \(-4a - 6b \)  \( H \) \(-2a - 4b \)
   \( G \) \( 2a - 4b \)  \( J \) \(-4a + 6b \)

11. Determine which number is a solution of \( x - 6 = 23. \)

   \( A \) 138  \( C \) 17
   \( B \) 29  \( D \) 7

12. Solve the equation \( r + 9 = -7. \)

   \( F \) \( r = 16 \)  \( H \) \( r = -2 \)
   \( G \) \( r = 2 \)  \( J \) \( r = -16 \)

13. Solve the equation \( t + 3 = 2. \)

   \( A \) \( t = 9 \)  \( C \) \( t = 5 \)
   \( B \) \( t = 6 \)  \( D \) \( t = 1 \)

14. Solve the equation \( 7z = 63. \)

   \( F \) \( z = 70 \)  \( H \) \( z = 9 \)
   \( G \) \( z = 8 \)  \( J \) \( z = 441 \)
15. Find the opposite of $-8$.
   A  $-8$  C  8
   B  $1 \div 8$  D  0

16. Add $-5 + (-4) + 3$.
   F  12  H  4
   G  $-6$  J  2

17. Evaluate the expression $x + y$ for $x = 19$ and $y = -7$.
   A  12  C  $-12$
   B  26  D  $-26$

18. Solve the equation $6c = 42$.
   F  $c = 252$  H  $c = 7$
   G  $c = 36$  J  $c = 4$

   A  $-12$  C  2
   B  $-2$  D  12

20. Find the product of $-6 \cdot 8$.
   F  $-48$  H  2
   G  $-2$  J  48

21. Evaluate the expression $x - y$ for $x = 24$ and $y = -19$.
   A  5  C  43
   B  $-5$  D  $-43$

22. Evaluate the expression $x \cdot y$ for $x = -3$ and $y = -24$.
   F  27  H  72
   G  $-27$  J  72

23. Add $8.54 + 7$.
   A  8.61  C  15.54
   B  9.24  D  1.54

   F  11.8  H  4.2
   G  5.8  J  3.2

25. Multiply $9.4 \cdot 3.2$.
   A  27.8  C  30.08
   B  29.08  D  30.8

26. Divide $8.48 \div 4$.
   F  33.92  H  4.24
   G  12.48  J  2.12

27. A new mystery novel will cost Mikayla $26.60. If she earns $6.65 an hour, how many hours will she have to work in order to purchase it?
   A  2  C  19.95
   B  4  D  189
28. Solve the equation $7.34 - y = 9.06$.
   F $-16.4$     H $1.72$
   G $-1.72$     J $16.4$

29. Multiply $5 \cdot \frac{2}{5}$. Which is the answer in simplest form?
   A $\frac{10}{5}$
   B $2$
   C $\frac{1}{2}$
   D $4$

30. Divide $12\frac{1}{2} \div 3\frac{1}{8}$. Which is the answer in simplest form?
   F $\frac{1}{4}$
   G $\frac{50}{16}$
   H $4$
   J $\frac{25}{4}$

31. Jackie bought two chickens weighing $6\frac{1}{2}$ lb and $3\frac{1}{4}$ lb. Estimate the difference in weights of the chickens.
   A $2\frac{1}{2}$ lb
   B $3$ lb
   C $3\frac{1}{2}$ lb
   D $4$ lb

32. Add $\frac{5}{12} + \frac{1}{12}$. Which is the answer in simplest form?
   F $\frac{6}{12}$
   G $\frac{6}{24}$
   H $\frac{1}{2}$
   J $\frac{1}{4}$

33. Subtract $5\frac{5}{8} - 2\frac{3}{8}$. Which is the answer in simplest form?
   A $\frac{26}{8}$
   B $3\frac{1}{4}$
   C $3\frac{2}{8}$
   D $3$

34. Solve $\frac{1}{2} + x = \frac{3}{4}$. Which is the answer in simplest form?
   F $\frac{1}{8}$
   G $\frac{1}{4}$
   H $\frac{1}{2}$
   J $\frac{7}{8}$

35. On a number line, point A has coordinate 10 and point B has coordinate 6. Point P is $\frac{1}{2}$ of the way from A to B. What is the coordinate of P?
   A $2$
   B $4$
   C $6$
   D $8$
36. Evaluate $2.56 \div 0.64 \div 0.02$.
   F 0.08
   G 20
   H 80
   J 200

37. Laura paid $9.35 for 3.4 pounds of ground beef. How much does one pound of ground beef cost?
   A $2.75
   B $3.00
   C $5.85
   D $31.79

38. Multiply $(-0.3)^2 \cdot (-3.3)$.
   F $-0.297$
   G $-0.00297$
   H 0.0297
   J 0.297

39. Multiply $2\frac{1}{3} \cdot \frac{1}{2} \cdot \frac{6}{7} \cdot 3\frac{7}{8}$.
   A $\frac{3}{7}$
   B 2
   C $2\frac{1}{3}$
   D $3\frac{7}{8}$

40. Solve $1\frac{2}{5} = 2\frac{1}{10}$.
   F $1\frac{1}{2}$
   G 2
   H $2\frac{1}{4}$
   J $2\frac{47}{50}$

41. Lorenzo had $5\frac{7}{8}$ ft of lumber. He used $3\frac{5}{12}$ ft to make some shelves. About how much lumber does he have left?
   A $1\frac{1}{2}$ ft
   B 2 ft
   C $2\frac{1}{2}$ ft
   D 3 ft

42. Simplify $\frac{3}{5} + \frac{5}{6} - \frac{11}{15} + \frac{7}{10}$.
   F 0
   G $1\frac{2}{5}$
   H 2
   J $4\frac{1}{15}$
CHAPTER 4

Cumulative Test

Choose the best answer.

1. On a number line, point $A$ is located at $-2$ and point $B$ is located at 7.
   Point $P$ is $\frac{1}{3}$ of the way from $A$ to $B$.
   Where is point $P$?
   - A 1
   - B 2
   - C 5
   - D 7

2. Which is $\frac{7}{8}$ written as a decimal?
   - F 0.875
   - G 1.14
   - H 7.8
   - J 8.7

3. Find the value of $3^2 + 3^3$.
   - A 36
   - B 50
   - C 243
   - D 59,049

4. Find the missing number in $2.75 \times 10^7 = 27,500$.
   - F 2
   - G 3
   - H 4
   - J 5

5. Which expression has a value of 20?
   - A $2 + 3^2 - 5$
   - B $5^2 - 3 \cdot 2$
   - C $2 \cdot 3^2 - 5$
   - D $(2 + 3)^2 - 5$

6. What composite number is represented by $2 \cdot 3^3 \cdot 7$?
   - F 126
   - G 378
   - H 1,512
   - J 74,088

7. Which pair of numbers has a greatest common factor (GCF) that is a prime number?
   - A 4 and 12
   - B 5 and 30
   - C 12 and 24
   - D 24 and 30

8. Find the least common multiple (LCM) of 5, 7, and 9.
   - F 35
   - G 63
   - H 315
   - J 945

9. Evaluate $5x - 4$ for $x = 3$.
   - A $-1$
   - B 11
   - C 19
   - D 35

10. Which is “4 times the sum of a number and 7” as an algebraic expression?
    - F $4(x + 7)$
    - G $(4 \cdot 7) + x$
    - H $4 \cdot 7 + x$
    - J $4x + 7$

11. Which expression simplifies to $8x + 2y$?
    - A $5x + 4y - 3x - 2y$
    - B $6y + x + 7x - 3y$
    - C $10x - y - 2x + 3y$
    - D $8x - y + x + 3y$

12. Which number is a solution of $25 - 3x = 13$?
    - F $x = 2$
    - G $x = 3$
    - H $x = 4$
    - J $x = 12$

13. Solve the equation $h - 67 = 34$.
    - A 33
    - B 34
    - C 91
    - D 101

    - F 27
    - G 31
    - H 37
    - J 310
15. Which group of numbers is in order from least to greatest?
   A -4, -3, 0, 2, 4
   B -4, -3, 2, 4, 0
   C 0, 2, -3, -4, 4
   D 4, 2, 0, -3, -4

16. Identify the quadrant of the point (-5, -2).
   F Quadrant I
   G Quadrant II
   H Quadrant III
   J Quadrant IV

17. What are the coordinates of the point that is 6 units right and 2 units down from the origin?
   A (-2, 6)
   B (6, -2)
   C (-2, -6)
   D (6, 2)

18. Add -27 + (-14).
   F -41
   G -13
   H 13
   J 41

   A -30
   B -6
   C 6
   D 30

20. Find 6 • (-7).
   F -42
   G -1
   H 1
   J 42

21. Find -56 ÷ (-8).
   A -9
   B -7
   C 7
   D 9

   F -96
   G -20
   H -6
   J 6

23. Multiply (-0.3)² • (-3.3).
   A -0.00297
   B -0.297
   C 0.297
   D 0.0297

24. Which pair of fractions is equivalent?
   F \( \frac{8}{12} \) and \( \frac{6}{9} \)
   G \( \frac{9}{12} \) and \( \frac{10}{16} \)
   H \( \frac{4}{8} \) and \( \frac{5}{9} \)
   J \( \frac{10}{15} \) and \( \frac{15}{20} \)

25. Which pair of numbers is equivalent?
   A \( \frac{5}{9} \) and 0.45
   B \( \frac{4}{9} \) and 0.45
   C \( \frac{9}{20} \) and 0.45
   D \( \frac{5}{11} \) and 0.45

26. Which group of numbers is in order from least to greatest?
   F 1.03, 1.35, \( 1 \frac{1}{3} \) \( H 1 \frac{1}{3}, 1.03, 1.35 \)
   G 1.35, 1.03, \( 1 \frac{1}{3} \)
   J 1.03, \( 1 \frac{1}{3} \), 1.35

27. Estimate 56.25 ÷ 7.89 by rounding.
   A 6
   B 7
   C 7.1
   D 8

28. Subtract 5.27 - 2.7.
   F 2.57
   G 3
   H 3.57
   J 7.976

29. Multiply 6.35 • 5.2.
   A 30
   B 30.32
   C 33.02
   D 330.20
30. Divide $15.19 \div 7$.
   F 2.17       H 10.633
   G 21.7       J 106.33

31. A new portable DVD player will cost James $499.50. If he earns $83.25 a week, how many weeks will he have to save in order to purchase it?
   A 6       C 21
   B 12      D 42

32. Solve the equation $3.2x = 54.4$.
   F 1.7       H 17
   G 16       J 170

33. Multiply $8 \frac{2}{3} \cdot \frac{1}{4}$. Which is the answer in simplest form?
   A $\frac{6}{13}$       C $2 \frac{2}{12}$
   B $2 \frac{1}{6}$       D $\frac{26}{12}$

34. Divide $12 \frac{1}{2} \div 3 \frac{3}{4}$. Which is the answer in simplest form?
   F $\frac{10}{3}$       H $3 \frac{1}{3}$
   G 3       J 4

35. Hailey is mailing two packages at the post office. The packages weigh $8 \frac{5}{8}$ lb and $5 \frac{1}{5}$ lb. Estimate the difference in weights of the packages.
   A 2 lb       C $3 \frac{1}{2}$ lb
   B 3 lb       D 4 lb

36. Add $\frac{1}{6} + \frac{3}{4}$. Which is the answer in simplest form?
   F $\frac{2}{5}$       H $\frac{11}{12}$
   G $\frac{3}{4}$       J 1

37. Subtract $8 \frac{5}{8} - 7 \frac{3}{4}$. Which is the answer in simplest form?
   A $\frac{7}{8}$       C $1 \frac{7}{8}$
   B $1 \frac{1}{8}$       D $\frac{19}{8}$

38. Solve $\frac{3}{4}x = \frac{1}{2}$. Which is the answer in simplest form?
   F $\frac{1}{3}$       H $\frac{2}{3}$
   G $\frac{1}{2}$       J $\frac{4}{6}$

39. What are the coordinates of the point that is 2 units right and 5 units down from the origin?
   A (2, 5)       C (2, -5)
   B (-2, 5)       D (-2, -5)

40. Identify the quadrant of the point (3, -5).
   F Quadrant I       H Quadrant III
   G Quadrant II      J Quadrant IV
41. Which of the following best describes the pattern for the table?

<table>
<thead>
<tr>
<th>$x$</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>$y$</td>
<td>−2</td>
<td>−4</td>
<td>−6</td>
</tr>
</tbody>
</table>

A arithmetic; add −4  
B geometric; multiply by 3  
C arithmetic; add −2  
D geometric; multiply by −2

42. Which statement best tells the story of the graph?

- F a car slowed down to a stop  
- G a car started from a stop  
- H a car maintained constant speed  
- J a car stopped and then started

43. Which function matches the function table?

<table>
<thead>
<tr>
<th>$x$</th>
<th>$y$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>−1</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

A $3x − 1$  
B $3x + 1$  
C $2x − 3$  
D $2x + 3$