### LENGTH

<table>
<thead>
<tr>
<th>Metric</th>
<th>Customary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kilometer = 1000 meters</td>
<td>1 mile = 1760 yards</td>
</tr>
<tr>
<td>1 meter = 100 centimeters</td>
<td>1 mile = 5280 feet</td>
</tr>
<tr>
<td>1 centimeter = 10 millimeters</td>
<td>1 yard = 3 feet</td>
</tr>
<tr>
<td></td>
<td>1 foot = 12 inches</td>
</tr>
</tbody>
</table>

### CAPACITY AND VOLUME

<table>
<thead>
<tr>
<th>Metric</th>
<th>Customary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 liter = 1000 milliliters</td>
<td>1 gallon = 4 quarts</td>
</tr>
<tr>
<td></td>
<td>1 gallon = 128 fluid ounces</td>
</tr>
<tr>
<td></td>
<td>1 quart = 2 pints</td>
</tr>
<tr>
<td></td>
<td>1 pint = 2 cups</td>
</tr>
<tr>
<td></td>
<td>1 cup = 8 fluid ounces</td>
</tr>
</tbody>
</table>

### MASS AND WEIGHT

<table>
<thead>
<tr>
<th>Metric</th>
<th>Customary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kilogram = 1000 grams</td>
<td>1 ton = 2000 pounds</td>
</tr>
<tr>
<td>1 gram = 1000 milligrams</td>
<td>1 pound = 16 ounces</td>
</tr>
</tbody>
</table>

### TIME

- 1 year = 365 days
- 1 year = 12 months
- 1 year = 52 weeks
- 1 week = 7 days
- 1 day = 24 hours
- 1 hour = 60 minutes
- 1 minute = 60 seconds

Metric and customary rulers can be found on the separate Mathematics Chart.
### Mathematics Chart

<table>
<thead>
<tr>
<th>Perimeter</th>
<th>rectangle</th>
<th>( P = 2l + 2w ) or ( P = 2(l + w) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circumference</td>
<td>circle</td>
<td>( C = 2\pi r ) or ( C = \pi d )</td>
</tr>
<tr>
<td>Area</td>
<td>rectangle</td>
<td>( A = lw ) or ( A = bh )</td>
</tr>
<tr>
<td></td>
<td>triangle</td>
<td>( A = \frac{1}{2} bh ) or ( A = \frac{bh}{2} )</td>
</tr>
<tr>
<td></td>
<td>trapezoid</td>
<td>( A = \frac{1}{2} (b_1 + b_2)h ) or ( A = \frac{(b_1 + b_2)h}{2} )</td>
</tr>
<tr>
<td></td>
<td>regular polygon</td>
<td>( A = \frac{1}{2} aP )</td>
</tr>
<tr>
<td></td>
<td>circle</td>
<td>( A = \pi r^2 )</td>
</tr>
</tbody>
</table>

\( P \) represents the Perimeter of the Base of a three-dimensional figure.

\( B \) represents the Area of the Base of a three-dimensional figure.

<table>
<thead>
<tr>
<th>Surface Area</th>
<th>cube (total)</th>
<th>( S = 6s^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>prism (lateral)</td>
<td>( S = Ph )</td>
</tr>
<tr>
<td></td>
<td>prism (total)</td>
<td>( S = Ph + 2B )</td>
</tr>
<tr>
<td></td>
<td>pyramid (lateral)</td>
<td>( S = \frac{1}{2} Pl )</td>
</tr>
<tr>
<td></td>
<td>pyramid (total)</td>
<td>( S = \frac{1}{2} Pl + B )</td>
</tr>
<tr>
<td></td>
<td>cylinder (lateral)</td>
<td>( S = 2\pi rh )</td>
</tr>
<tr>
<td></td>
<td>cylinder (total)</td>
<td>( S = 2\pi rh + 2\pi r^2 ) or ( S = 2\pi r(h + r) )</td>
</tr>
<tr>
<td></td>
<td>cone (lateral)</td>
<td>( S = \pi rl )</td>
</tr>
<tr>
<td></td>
<td>cone (total)</td>
<td>( S = \pi rl + \pi r^2 ) or ( S = \pi r(l + r) )</td>
</tr>
<tr>
<td></td>
<td>sphere</td>
<td>( S = 4\pi r^2 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volume</th>
<th>prism or cylinder</th>
<th>( V = Bh )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pyramid or cone</td>
<td>( V = \frac{1}{3} Bh )</td>
</tr>
<tr>
<td></td>
<td>sphere</td>
<td>( V = \frac{4}{3}\pi r^3 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special Right Triangles</th>
<th>( 30^\circ, 60^\circ, 90^\circ )</th>
<th>( x, \ x\sqrt{3}, \ 2x )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( 45^\circ, 45^\circ, 90^\circ )</td>
<td>( x, \ x, \ x\sqrt{2} )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pythagorean Theorem</th>
<th>( a^2 + b^2 = c^2 )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Distance Formula</th>
<th>( d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Slope of a Line</th>
<th>( m = \frac{y_2 - y_1}{x_2 - x_1} )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Midpoint Formula</th>
<th>( M = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right) )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Quadratic Formula</th>
<th>( x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Slope-Intercept Form of an Equation</th>
<th>( y = mx + b )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Point-Slope Form of an Equation</th>
<th>( y - y_1 = m(x - x_1) )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Standard Form of an Equation</th>
<th>( Ax + By = C )</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Simple Interest Formula</th>
<th>( I = prt )</th>
</tr>
</thead>
</table>

Page 6
SAMPLE A

Find the slope of the line $2y = 8x - 3$.

A $\frac{-3}{2}$

B 4

C 8

D Not here

SAMPLE B

Janice uses a rectangular box to store her art supplies. The dimensions of the rectangular box are 22.5 inches by 14 inches by 11.5 inches. What is the volume of this box in cubic inches?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.
The grid below shows the top view of a 3-dimensional structure built using identical cubes. The numbers represent how many cubes are in each column.

Which of the following best represents this structure?
2 Wesley works at a shoe store. He is paid $8 an hour plus a 7% commission on his total sales. Which of the following best represents $t$, Wesley's total weekly earnings if he works 30 hours and has total sales of $s$ dollars?

F $t = 0.08(30) + 0.07s$
G $t = 8(30) + 7s$
H $t = 8(30) + 0.07s$
J $t = 8(30) + 0.7s$

3 A toy company plans to make a model of a train engine using a scale where 1 inch represents 4 feet. If the length of the actual engine is 51 feet, which of these is closest to the length of the model in inches?

A $12\frac{3}{4}$ in.
B 3 in.
C 204 in.
D $11\frac{1}{3}$ in.

4 Mr. Vincent owns a store that sells auto parts. He budgeted $24,000 for the store's expenses last month. The graph below shows the percentage of the budget he reserved for each type of expense.

- **Insurance**: 12%
- **Utilities**: 13%
- **Rent**: 14%
- **Inventory**: 22%
- **Labor**: 36%
- **Misc.**: 3%

Which statement is best supported by the data in the graph?

F Mr. Vincent budgeted $15,500 for labor, utilities, and rent.
G More than 50% of Mr. Vincent’s budget was reserved for rent and utilities.
H Mr. Vincent budgeted $16,800 for labor, insurance, and inventory.
J Less than 50% of Mr. Vincent’s budget was reserved for labor and inventory.
5 The graph of \(y = 0.2x^2\) is shown below.

Which of the following equations represents a graph that is wider than the graph of \(y = 0.2x^2\)?

- A \(y = 0.3x^2\)
- B \(y = 0.2x^2 + 1\)
- C \(y = 0.1x^2\)
- D \(y = 0.2x^2 - 1\)

6 Which expression is equivalent to \(5(4 + 3(x - 6))\)?

- F \(15x - 10\)
- G \(15x - 70\)
- H \(15x - 14\)
- J \(15x - 110\)
The dimensions of a rectangular poster board are shown below.

Which rectangle can be dilated to fit the exact dimensions of this poster board?

A  

B  

C  

D  

GO ON
8  What is the equation of the line that passes through the point (9, 2) and has a y-intercept of (0, 5)?

\[ y = \frac{1}{3}x + 5 \]

\[ y = 2x + 5 \]

\[ y = -\frac{1}{3}x + 5 \]

\[ y = 5x + 9 \]

9  Jeri can row a boat at a speed of 8 miles per hour with the current. The number of miles, \( m \), she rows with the current in \( h \) hours can be represented by the function \( m = 8h \). Which of the following represents the dependent quantity in this function?

A  The weight of Jeri’s boat

B  The speed of the current

C  The amount of time Jeri rows

D  The number of miles Jeri rows
11 Jason had $87 in his savings account. He then worked for 2 weeks, earning $5.75 per hour, and deposited all the money he earned into his savings account. The account then had a balance of $271. Which method can be used to find the number of hours Jason worked?

A Subtract 87 from 271 and then divide the difference by 5.75
B Subtract 87 from 271 and then multiply the difference by 5.75
C Add 87 to 271 and then divide the sum by 5.75
D Add 87 to 271 and then multiply the sum by 5.75

10 The two rectangles shown below are similar. The ratio of the length of the larger rectangle to the length of the smaller rectangle is 3:1.

Which of the following statements is true?

F The area of the smaller rectangle is $\frac{1}{4}$ the area of the larger rectangle.
G The area of the larger rectangle is 3 times the area of the smaller rectangle.
H The perimeter of the smaller rectangle is $\frac{1}{3}$ the perimeter of the larger rectangle.
J The perimeter of the larger rectangle is 6 times the perimeter of the smaller rectangle.
The tables below show the amount of data in kilobytes that was downloaded by a computer over time. Which of the following tables best represents a linear function?

<table>
<thead>
<tr>
<th>Kilobytes Downloaded</th>
<th>Kilobytes Downloaded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time (seconds)</strong></td>
<td><strong>Number of Kilobytes</strong></td>
</tr>
<tr>
<td>10</td>
<td>65</td>
</tr>
<tr>
<td>20</td>
<td>130</td>
</tr>
<tr>
<td>30</td>
<td>180</td>
</tr>
<tr>
<td>40</td>
<td>215</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kilobytes Downloaded</th>
<th>Kilobytes Downloaded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time (seconds)</strong></td>
<td><strong>Number of Kilobytes</strong></td>
</tr>
<tr>
<td>10</td>
<td>35</td>
</tr>
<tr>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>30</td>
<td>125</td>
</tr>
<tr>
<td>40</td>
<td>150</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kilobytes Downloaded</th>
<th>Kilobytes Downloaded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time (seconds)</strong></td>
<td><strong>Number of Kilobytes</strong></td>
</tr>
<tr>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>30</td>
<td>110</td>
</tr>
<tr>
<td>40</td>
<td>140</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kilobytes Downloaded</th>
<th>Kilobytes Downloaded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time (seconds)</strong></td>
<td><strong>Number of Kilobytes</strong></td>
</tr>
<tr>
<td>10</td>
<td>45</td>
</tr>
<tr>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>30</td>
<td>135</td>
</tr>
<tr>
<td>40</td>
<td>180</td>
</tr>
</tbody>
</table>

13 $\triangle LPT$ is an obtuse scalene triangle. If $\angle P$ is the obtuse angle in $\triangle LPT$, which of the following is not a valid conclusion?

A $m\angle L + m\angle T < m\angle P$
B $m\angle P + m\angle T < 90^\circ$
C $m\angle L + m\angle T < 90^\circ$
D $m\angle L + m\angle P + m\angle T = 180^\circ$
The length of a rectangular garden is 20 feet longer than the width, \( w \). Which equation best describes the garden’s perimeter, \( P \)?

**F** \( P = (w + 20) + w \)

**G** \( P = (w + 20)w \)

**H** \( P = (w + 20)2w \)

**J** \( P = 2(w + 20) + 2w \)
17. Mr. García built a rectangular deck in his backyard. The deck was 16 feet long and 12 feet wide. What was the length, in feet, of the diagonal of the rectangular deck?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

A. $0.90  
B. $1.20  
C. $2.60  
D. $4.08

18. At an automobile dealership, 2 out of every 12 cars sold are red. Which is the best prediction of the number of red cars sold when the automobile dealer sells 150 cars?

F. 75  
G. 25  
H. 15  
J. 12

19. Mr. García built a rectangular deck in his backyard. The deck was 16 feet long and 12 feet wide. What was the length, in feet, of the diagonal of the rectangular deck?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.
20 $\triangle KLP$ has vertices $K(-4, 2)$, $L(2, 6)$, and $P(4, -6)$. It is dilated to form $\triangle K'L'P'$ with the origin as the center of dilation.

If the coordinates of $K'$ are $(-6, 3)$, what scale factor was used to form $\triangle K'L'P'$?

- F $\frac{2}{3}$
- G $\frac{1}{4}$
- H $\frac{3}{2}$
- J 4
The formula below can be used to convert temperatures in degrees Fahrenheit, $F$, to temperatures in degrees Celsius, $C$.

$$C = \frac{5}{9}(F - 32)$$

On a certain day temperatures at the North Pole were between $-20^\circ F$ and $-15^\circ F$. Which of these is a reasonable temperature in degrees Celsius for that day at the North Pole?

- $F \quad -30^\circ C$
- $G \quad -22^\circ C$
- $H \quad -27^\circ C$
- $J \quad -11^\circ C$

If the area of a circle is 95 square inches, which of the following is closest to the circumference of this circle?

- $A \quad 17$ in.
- $B \quad 35$ in.
- $C \quad 19$ in.
- $D \quad 190$ in.
23. A math club is planning to sell candles to pay for the cost of attending the regional math competition. The club needs to raise a total of $250. The candles come in boxes of 24. What additional information is needed to determine the number of candles the club needs to sell?

F. The colors of the candles
G. The profit the club will make on each candle sold
H. The number of boxes ordered
J. The number of students in the math club

24. To buy a membership at a recreation center, people must pay a one-time registration fee plus a regular monthly fee. The table below shows the total amount a person pays, including the registration fee, for different numbers of months of membership.

<table>
<thead>
<tr>
<th>Membership Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Months</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>24</td>
</tr>
</tbody>
</table>

According to the information in the table, which of the following statements is true?

A. The monthly fee is $50.
B. The monthly fee is $37.50.
C. The registration fee is $75.
D. The registration fee is $50.
25  Which statement best describes how the volume of a cube changes when the edge length is doubled to form a new cube?

A  The volume of the new cube is \( \frac{1}{2} \) the volume of the original cube.

B  The volume of the new cube is \( \frac{1}{4} \) the volume of the original cube.

C  The volume of the new cube is 8 times the volume of the original cube.

D  The volume of the new cube is 4 times the volume of the original cube.

26  Which point on the grid below best represents the coordinate point \( \left( \frac{9}{2}, \frac{9}{4} \right) \)?

F  Point Q
G  Point M
H  Point V
J  Point K
27 Which of the following best represents the range of the function shown below?

A The range is all real numbers.
B The range is all real numbers greater than or equal to 4.
C The range is all real numbers greater than or equal to zero.
D The range is all real numbers greater than or equal to $-4$.

28 A spherical ball has a diameter of 10 centimeters. Which is closest to the volume of the ball?

F $524 \text{ cm}^3$
G $393 \text{ cm}^3$
H $4189 \text{ cm}^3$
J $105 \text{ cm}^3$
29 In the trapezoidal prism shown below, $NP = 8$ centimeters, and $QR = 12$ centimeters. The height of the prism is 15 centimeters.

Which additional information can be used to determine the volume of the prism?

A The area of rectangle $PXWN$
B The area of rectangle $QYZR$
C The length of $NR$
D The length of $TS$

30 Lorraine wants to paint the 4 rectangular walls of a room, including the door. The room is 18 feet long and 12 feet wide, and the walls are 10 feet high. What is the total area that will be painted?

F $300 \text{ ft}^2$
G $600 \text{ ft}^2$
H $816 \text{ ft}^2$
J $864 \text{ ft}^2$

31 Which of the following represents the parent function of $y = x^2 - 2x - 15$?

A $y = x$
B $y = x^2 - 15$
C $y = x^2$
D $y = -2x$
What is the slope of the graph of the equation $3x + 2y = 6$?

F $\frac{2}{3}$

G $-\frac{3}{2}$

H $-\frac{2}{3}$

J $\frac{3}{2}$
35 The net of a cylinder is shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the net to the nearest $\frac{1}{4}$ inch.

Which of these is closest to the total surface area of the cylinder?

A 4 in. $^2$
B 2.5 in. $^2$
C 6 in. $^2$
D 1.8 in. $^2$

36 If $c = -5$, how does the graph of $y = x^2 + 2c$ compare to the graph of $y = x^2 + c$?

F The graph of $y = x^2 + 2c$ is below the graph of $y = x^2 + c$.
G The graph of $y = x^2 + 2c$ is above the graph of $y = x^2 + c$.
H The graph of $y = x^2 + 2c$ is narrower than the graph of $y = x^2 + c$.
J The graph of $y = x^2 + 2c$ is wider than the graph of $y = x^2 + c$. 

Page 24
Elise practiced gymnastics for 50 minutes. The time she spent on each activity is recorded in the table below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time Spent (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance beam</td>
<td>7</td>
</tr>
<tr>
<td>Vault</td>
<td>3</td>
</tr>
<tr>
<td>Uneven bars</td>
<td>15</td>
</tr>
<tr>
<td>Trampoline</td>
<td>5</td>
</tr>
<tr>
<td>Floor</td>
<td>20</td>
</tr>
</tbody>
</table>

Which of the following graphs best represents the percent of time Elise spent on each activity during her gymnastics practice?
38 Which of the following best represents the graph of the equation $4x - y = -5$?

- F
- H
- G
- J

39 Jasmine bought an alarm clock that was on sale for 25% off the regular price of $24.99. She paid an 8% sales tax on the sale price. Which of the following is closest to the amount Jasmine paid for the alarm clock, including sales tax?

- A $18.74
- B $22.99
- C $17.24
- D $20.24
The area, \( A \), of a parallelogram is \( 64x^6y^5 \) square feet. The height, \( h \), of the parallelogram is \( 16x^3y^2 \) feet. The area of a parallelogram can be found by using the formula \( A = bh \). Which of the following best represents the length of this parallelogram's base, \( b \)?

- **A** \( 4x^6y^4 \) ft
- **B** \( 80x^{12}y^8 \) ft
- **C** \( 4x^3y^3 \) ft
- **D** \( 48x^6y^4 \) ft

What is \( x \), the width of the bathroom in inches?

- **F** 112 in.
- **G** 40 in.
- **H** 144 in.
- **J** 48 in.
The following figures are examples of *skeys*.  

The following figures are not examples of *skeys*.  

According to this information, which of the following figures best represents a *skey*?  

**F**  

**H**  

**G**  

**J**  

---  

**43** For what value of \( x \) is \((x, -3)\) a solution for \( 4x - 3y = 21 \)?  

A 11  
B -3  
C -11  
D 3
\( \triangle RST \) has the vertices \( R (−4, 5) \), \( S (−2, 3) \), and \( T (−5, 2) \).

If \( \triangle RST \) is reflected across the \( x \)-axis and then translated 2 units down to become \( \triangle R'S'T' \), what will be the coordinates of \( S' \)?

F \((2, 1)\)

G \((-2, -5)\)

H \((-5, -2)\)

J \((-2, -1)\)
45 Mandy bought a bag of peanuts to share with her friends.

- Trisha received \(\frac{1}{2}\) of the peanuts in the bag.
- Vince received \(\frac{1}{4}\) of the peanuts Trisha received.
- Ray received \(\frac{1}{3}\) of the peanuts Vince received.

If Ray received 4 peanuts, how many peanuts were in the bag Mandy bought?

A 13  
B 32  
C 96  
D Not here

46 Which point on the grid satisfies the conditions \(x \geq -3\) and \(y \leq -1\)?

![](image)

F Point N  
G Point P  
H Point M  
J Point L

47 Wanda wants to buy some picture frames for her home. Small picture frames cost $8 each, and large picture frames cost $12 each. If Wanda wants to spend less than $100 on picture frames, which of the following inequalities can be used to determine the number of small frames, \(s\), and the number of large frames, \(l\), she can buy?

A \(12s + 8l < 100\)  
B \(8s + 12l < 100\)  
C \(12s + 8l > 100\)  
D \(8s + 12l > 100\)
48 Which of the following mappings best represents the function \( f(x) = -x^2 + 3 \)?

- **F**
  - \( x \) \( f(x) \)
  - -2 \( \rightarrow \) 7
  - 1 \( \rightarrow \) 2
  - 2
  - 3 \( \rightarrow \) 6

- **G**
  - \( x \) \( f(x) \)
  - -2 \( \rightarrow \) -1
  - 1 \( \rightarrow \) 2
  - 2 \( \rightarrow \) 1
  - 3 \( \rightarrow \) 0

- **H**
  - \( x \) \( f(x) \)
  - -2 \( \rightarrow \) -1
  - 1 \( \rightarrow \) 2
  - 2 \( \rightarrow \) 6
  - 3

- **J**
  - \( x \) \( f(x) \)
  - -1 \( \rightarrow \) 2
  - 2 \( \rightarrow \) 1
  - -1 \( \rightarrow \) 2
  - -6 \( \rightarrow \) 3

49 The three squares shown below are joined at their vertices to form a right triangle.

What is the area of the shaded square?

- **A** 80 cm\(^2\)
- **B** 352 cm\(^2\)
- **C** 2 cm\(^2\)
- **D** 658 cm\(^2\)
50 The graph of \( y = x^2 + 2x - 8 \) is shown below.

Which coordinate pair best represents the vertex of this graph?

- **F** \((-4, 0)\)
- **G** \((2, 0)\)
- **H** \((0, -8)\)
- **J** \((-1, -9)\)

---

51 Two complementary angles have measures of \( s \) and \( t \). If \( t \) is 9 less than twice \( s \), which system of linear equations can be used to determine the measure of each angle?

- **A** \( t + s = -9 \)
  \( t = 2s + 90 \)
- **B** \( t - s = -9 \)
  \( t = 2s - 90 \)
- **C** \( t + s = 90 \)
  \( t = 2s - 9 \)
- **D** \( t + s = 90 \)
  \( t = -2s - 9 \)
52  The two triangular prisms shown below are similar.

[Diagram of two triangular prisms with dimensions 2 cm x 1.5 cm x 1 cm and h cm x 2 cm x 2 cm]

Which of these is closest to $h$, the height of the larger prism?

F  1.3 cm  
G  2.7 cm  
H  7 cm  
J  1 cm

53  A company rented a copy machine for $225 per month for 3 months. The company also paid $0.012 for each copy made. If the total cost of using the copy machine during this 3-month period was $1,107, how many copies did the company make?

A  148,500  
B  92,250  
C  73,500  
D  36,000
54   The square tiles below are arranged to show a pattern.

```
Stage 1

Stage 2

Stage 3

Stage 4
```

Which expression can be used to determine the number of square tiles in Stage \( n \)?

- **F** \( 4n + 3 \)
- **G** \( 5n + 2 \)
- **H** \( n^2 + 6 \)
- **J** \( n^3 + 6 \)

---

55   The table below shows the relationship between \( x \) and \( f(x) \).

<table>
<thead>
<tr>
<th>( x )</th>
<th>( f(x) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>4</td>
</tr>
<tr>
<td>-1</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>-2</td>
</tr>
<tr>
<td>2</td>
<td>-4</td>
</tr>
</tbody>
</table>

Which function represents this relationship?

- **A** \( f(x) = 2x \)
- **B** \( f(x) = -2x \)
- **C** \( f(x) = -x - 2 \)
- **D** \( f(x) = x + 6 \)

---

56   If \( y \) is directly proportional to \( x \) and \( y = 8 \) when \( x = 10 \), what is the value of \( y \) when \( x = 5 \)?

- **F** 4
- **G** 16
- **H** 40
- **J** 80

---

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS ON THE ANSWER DOCUMENT.