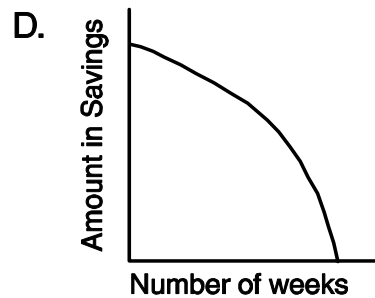
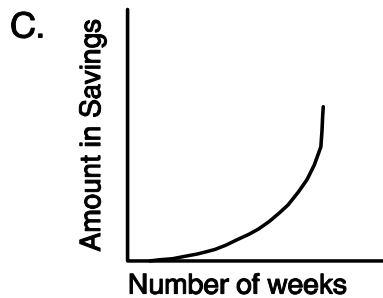
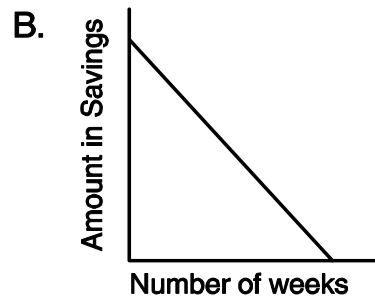
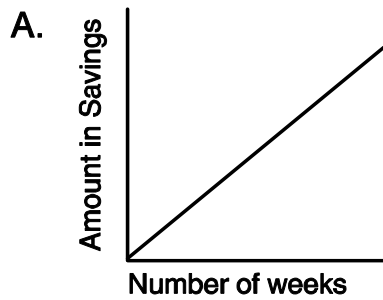


## Mathematics, Grade 7

## A4A7

Randy put \$5 per week in a savings account and continued to do this every week. Which of the graphs best represents the relationship between the number of weeks saved and the total amount saved?



## G1B7

Triangle  $ABC$  is similar but not congruent to triangle  $DEF$ . Which is *not* true?

- A. The measure of angle  $A$  is equal to the measure of angle  $D$ .
- B. The ratio of the lengths of side  $AB$  to side  $DE$  is equal to the ratio of the lengths of side  $BC$  to side  $EF$ .
- C. The ratio of the lengths of side  $AB$  to side  $BC$  is equal to the ratio of the lengths of the side  $DE$  to side  $EF$ .
- D. The perimeter of triangle  $ABC$  is equal to the perimeter of triangle  $DEF$ .

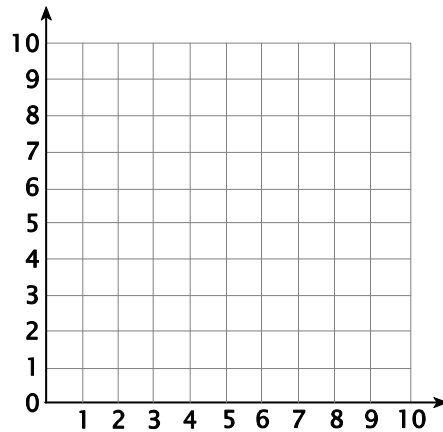
**A3A7**

Dan is 2 inches shorter than Greg. If Greg is  $g$  inches tall, which expression would give the sum of their heights?

- A.  $\text{sum} = g + 2g$
- B.  $\text{sum} = g + (g + 2)$
- C.  $\text{sum} = g + (g - 2)$
- D.  $\text{sum} = g - (g - 2)$

**G2A7**

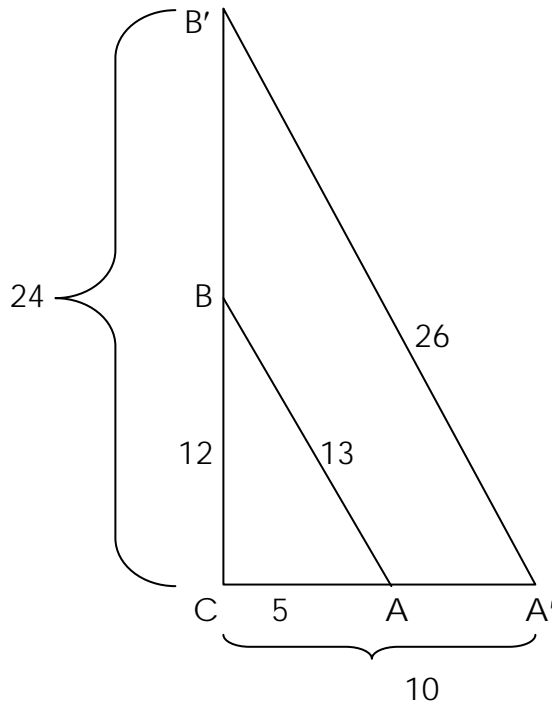
Plot the coordinates in the following order:  $(2, 0)$ ,  $(2, 2)$ ,  $(0, 2)$ , and  $(0, 0)$ . Which is *not* true?



- A. The figure formed is a square.
- B. The figure has 8 lines of symmetry.
- C. There is a horizontal line of symmetry for this figure.
- D. There is a vertical line of symmetry for this figure.

**G3B7**

Triangle  $A'B'C$  is the image of triangle  $ABC$  under a dilation centered at  $C$  with a scale factor of 2. How is the perimeter of triangle  $A'B'C$  related to the perimeter of triangle  $ABC$ ?



- A. The perimeter of triangle  $A'B'C$  divided by the scale factor equals the perimeter of triangle  $ABC$ .
- B. The perimeter of triangle  $A'B'C$  multiplied by the scale factor equals the perimeter of triangle  $ABC$ .
- C. The perimeter of triangle  $A'B'C$  plus the scale factor equals the perimeter of triangle  $ABC$ .
- D. The perimeter of triangle  $A'B'C$  minus the scale factor equals the perimeter of triangle  $ABC$ .

**G1A7**

All 4 sides of a quadrilateral are congruent and all 4 of its angles are right angles. Which statement is **not** true about this shape?

- A. The shape is a parallelogram and a rectangle.
- B. The shape is a rectangle and a rhombus.
- C. The shape is a parallelogram and a rhombus.
- D. The shape is a square and a trapezoid.

**A1D7**

The table shows the relationship between the number of exercise classes at the Civic Center and the cost of those classes.

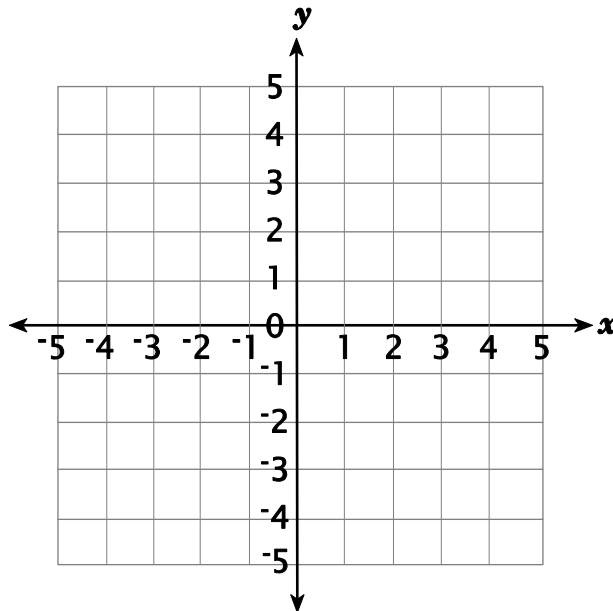
<b>Number of classes per week</b>	1	2	3	4	5
<b>Cost - \$</b>	5	9	12	14	15

Which describes the relationship between the number of classes and the cost for those classes at the Civic Center?

- A. no relationship
- B. linear
- C. non-linear
- D. constant

**G2A7**

Which set of points does *not* mark the vertices of a triangle?



- A. (0, 0), (0, 4), and (4, 5)
- B. (1, 0), (2, 2), and (3, 4)
- C. (-1, -1), (-2, -2), and (1, 2)
- D. (-2, 2), (2, -2), and (0, -2)

**A2A7**

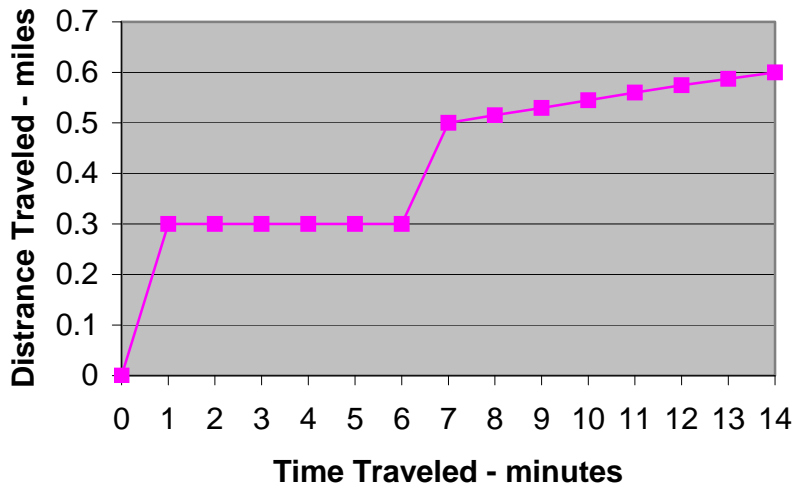
Perfecto Pizza’s one-topping large pizzas cost \$11.50 each. They charge \$0.75 for each additional topping. Which of the following shows the total cost of a large pizza?

- A.  $y = \$11.50 + \$0.75x$ , where  $y$  = the cost of the pizza and  $x$  = the number of additional toppings.
- B.
 

Number of extra toppings	Cost of pizza toppings
1	\$0.75
2	\$1.50
3	\$2.25
4	\$3.00
- C. The cost of a pizza = 75 cents more than the standard price.
- D.  $y = (\$11.50).75x$

**A3A7**

This graph describes Cierra’s trip from home to school. Which statement agrees with the graph?



- A. The fastest speed Cierra travels is from minute 7 to minute 12.
- B. Cierra does not get closer to the school between minute 1 and minute 6.
- C. The school is 14 miles from Cierra’s house.
- D. In the last 8 minutes Cierra travels farther than in the first 6 minutes.

**A2A7**

At the Strand Theater, movie tickets cost \$4 for children and \$6 for adults. Which equation describes the cost for  $c$  children's tickets and  $d$  adults' tickets?

- A.  $\text{cost} = 6c + 4d$
- B.  $\text{cost} = 6 + c + 4 + d$ .
- C.  $\text{cost} = 4(c + d) + 6$
- D.  $\text{cost} = 4c + 6d$

**G3C7**

Which statement about a square and an equilateral triangle is true?

- A. A square has fewer lines of symmetry than an equilateral triangle.
- B. The number of lines of symmetry of each figure equals the number of its sides.
- C. A square and an equilateral triangle have the same number of lines of symmetry.
- D. A square has 2 lines of symmetry, while an equilateral triangle has 3 lines of symmetry.

**A2B7**

How many of the expressions shown are equivalent to  $3a + 3b$ ?

$3(a + b)$        $a + a + b + a + b + b$        $3a + b$        $(a)(a)(a) + (b)(b)(b)$

- A. 1
- B. 2
- C. 3
- E. 4

**A3A7**

A particular rectangle keeps changing in size. The length is always 14, but the width can be any size,  $w$ .

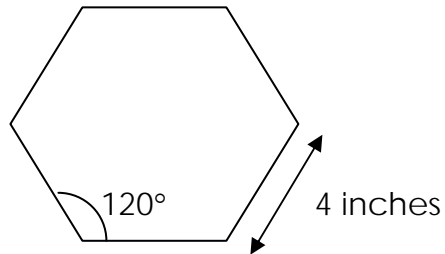
Write an equation using  $w$  to state the perimeter of this rectangle:

---

What is the perimeter of the rectangle if its width is 10? \_\_\_\_\_

**G1B7**

Zach made a picture frame in the shape of a regular hexagon. Each side of the picture frame was 4 inches long. Zach had already figured that each angle of his picture frame would have to be 120 degrees.



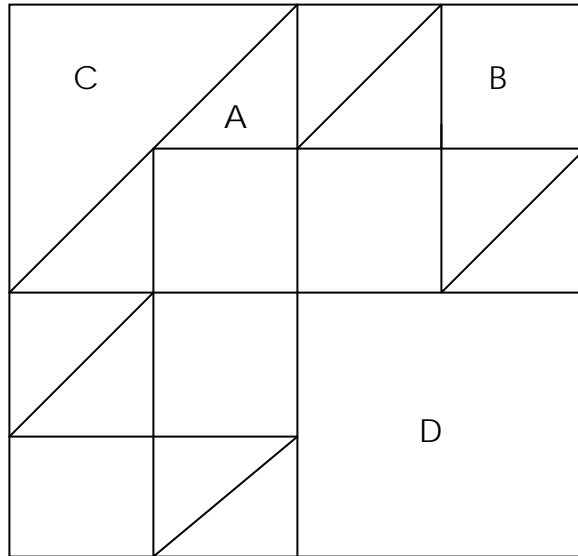
When Zach finished making this frame, he decided to make a bigger frame that was the same (similar) shape. This time, each side of the frame was 12 inches long. What will be the measure of each angle in the new frame if each side is three times longer than the sides of the original picture frame? Explain your reasoning.

Angle measure: \_\_\_\_\_



**A1B7**

This design uses 4 different-sized tiles. Tiles A and C are isosceles right triangles.



Complete the table to show the fractional part of the whole design each tile represents:

Tile Piece	A	B	C	D
Fractional Part	$1/32$		$1/8$	

Describe how the fractional parts change in size as you move from A to D through the chart.

**A1B7**

What rule determines what happens to the number in the input column that results in the number in the output column? State your rule in words or symbols and use it to find the output if the input is 80.

Use the table to answer question

Input	Output
2	4
3	9
4	16
5	?

Rule: \_\_\_\_\_

Input = 80, Output = \_\_\_\_\_

**A1B7**

The drama students tried to determine how many tickets to print for the upcoming play. Because they needed to know how many seats were available for the performance, Mr. Sproat gave them the table and equation shown.

**SEATING AVAILABLE**

Row Number	1	2	3	4	5	6	7
Number of seats in each row	20	26	32	38	44	50	56

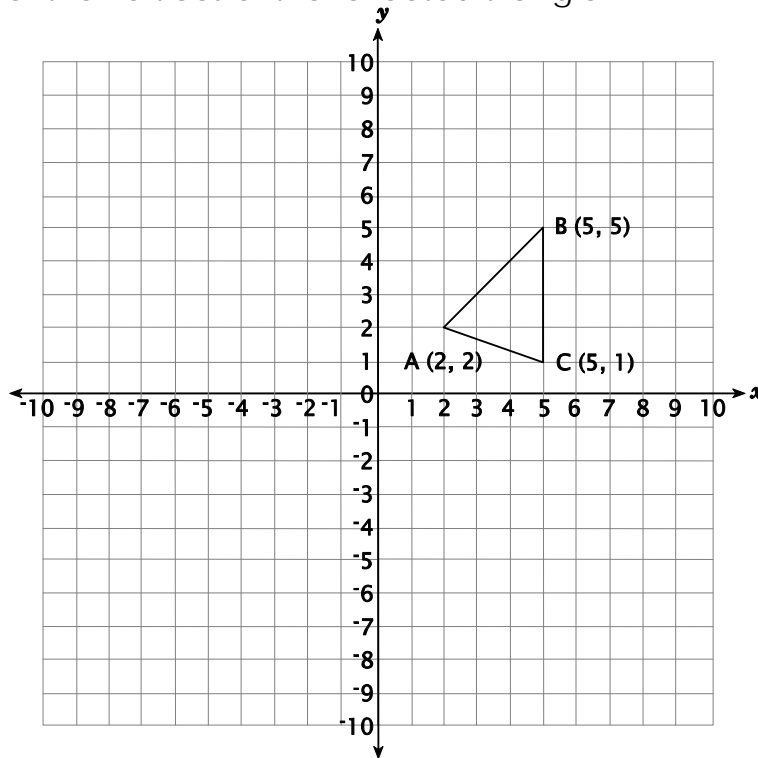
Equation: Let  $r$  = the row number.  
Let  $n$  = the number of seats in row  $r$ .  
Then,  $n = 20 + 6(r - 1)$

Use either of the representations Mr. Sproat provided to identify the pattern in the seating and describe that pattern in words.

Seating pattern:

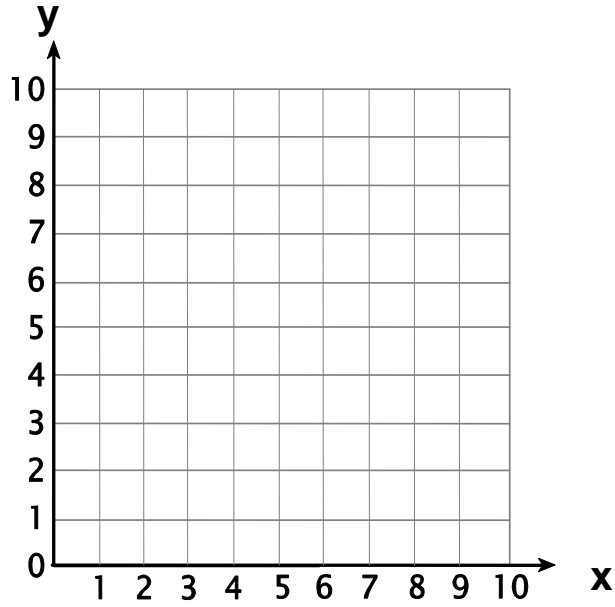
**G3A7**

On this grid, draw the reflection of triangle  $ABC$  across the  $y$ -axis. Label the coordinates of the vertices of the reflected triangle.



**G2A7**

Plot the coordinates  $(0, 0)$ ,  $(6, 0)$ ,  $(6, 6)$ , and  $(0, 6)$ .



Identify the shape formed by connecting these points with segments in the order the points are listed:

\_\_\_\_\_

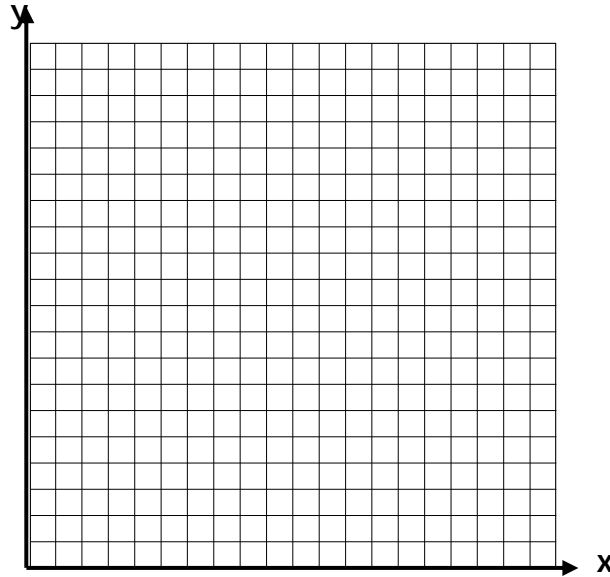
Draw all lines of symmetry on the figure plotted.

**A1D7**

This table gives data about the squaring of numbers:

<b>Number</b>	1	2	3	4	5	6
<b>Square of the number</b>	1	4	9	16	25	36

On the grid, plot the data in this table:



Explain whether the graph is linear or non-linear: