

acadience®math

# Concepts and Applications

## Grade 6 | Benchmark Assessment

### Teacher Key

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**Scoring Direction**

 Right to Left  
 or  
 Left to Right

# Acadience® Math / Concepts and Applications Grade 6 / Benchmark 1 / Teacher Key

Total: \_\_\_\_\_

1. At the aquarium there were 24 zebra fish and 61 clown fish. What is the ratio of zebra fish to clown fish? 24 : 61  
or equivalent

exact answer,  
points per line 1 | 2

2. Doug delivers papers to houses on the weekends. The following are the number of papers that Doug delivered: **5, 2, 9, 9, 5**.

A. What is the mean number of papers that Doug delivered? 6

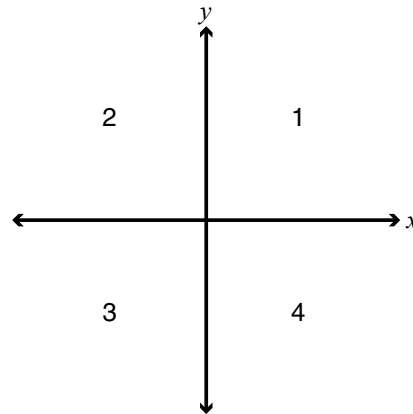
A: correct digits 1 | 11

B. What is the median number of papers that Doug delivered? 5

B. exact answer,  
points per line 1 | 5

3. Fill in the missing quadrants to complete the table:

| Point    | Quadrant |
|----------|----------|
| (-5, 7)  | <u>2</u> |
| (-5, -5) | <u>3</u> |
| (4, -7)  | 4        |
| (1, 7)   | <u>1</u> |



exact answer,  $\frac{1}{2}$  |  $\frac{1}{3}$   
points per box 2 | 3

4. A. Write an expression for **8 subtracted from x**:  $x - 8$

A. exact answer,  
points per line 1 | 3

B. Write an expression for **5 added to x**:  $5 + x$   
or equivalent

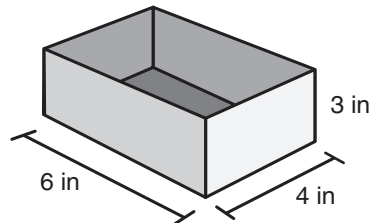
B. exact answer,  
points per line 1 | 3

5. Roy has a box and a bag of blocks. The blocks are  $\frac{1}{2}$  inch by  $\frac{1}{2}$  inch by  $\frac{1}{2}$  inch.

A. What is the volume of the box? 72 in<sup>3</sup>.

B. How many blocks will fit inside Roy's box?

576 blocks.



A. correct digits  $\frac{1}{2}$  |  $\frac{4}{9}$

B. correct digits  $\frac{1}{2}$  |  $\frac{7}{14}$   
 $\frac{2}{3}$  |  $\frac{14}{21}$

6. It takes Aunt Jen 2 weeks to make 6 hats. At this rate, how long will it take Aunt Jen to make 9 hats? 3 week(s).

correct digits 1 | 6

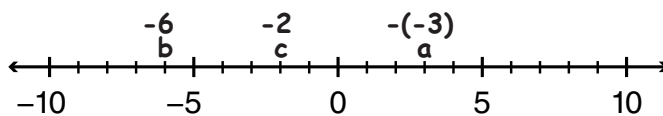
**Acadience® Math / Concepts and Applications**  
**Grade 6 / Benchmark 1 / Teacher Key**

7. Label the following numbers on the number line below:

a.  $-(-3)$

b.  $-6$

c.  $-2$



exact answer, 1 | 1  
 points per segment 2 | 2  
 (each labeled number) 3 | 3

8. Write "True" if the substitution makes the inequality true or write "False" if the substitution makes the inequality false:

| Inequality      | $x =$ | Write True or False |
|-----------------|-------|---------------------|
| $14x - 9 < 100$ | 5     | True                |
| $27x + 8 < 100$ | 9     | False               |

exact answer, 1 | 3  
 points per box 2 | 6

9. Complete the ratio table:

|    |    |
|----|----|
| 3  | 15 |
| 6  | 30 |
| 9  | 45 |
| 12 | 60 |
| 15 | 75 |

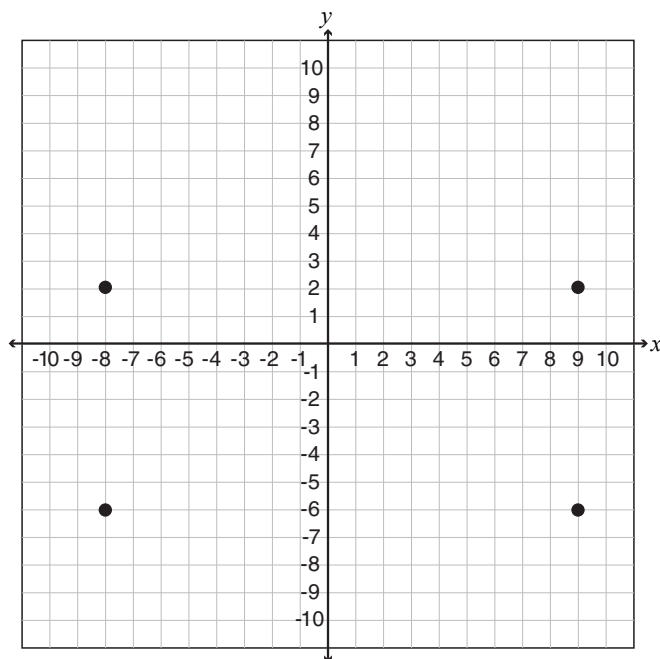
exact answer, 1 | 1  
 points per box 2 | 2  
 3 | 3  
 4 | 4

10. You are drawing an aerial view of a building.

The corners of the building are located at  
 $(9, 2)$ ,  $(9, -6)$ ,  $(-8, -6)$ .

A. If the vertices form a rectangle, find the location  
 of the last vertex: ( -8, 2 )

B. Plot all the vertices on the graph:



A. exact answer, 1 | 1  
 points per line 2 | 2

B. points per segment 1 | 1  
 2 | 2  
 3 | 3  
 (correct points plotted) 4 | 4

# Acadience® Math / Concepts and Applications

## Grade 6 / Benchmark 1 / Teacher Key

11. Tony earns \$5 per child that he babysits.

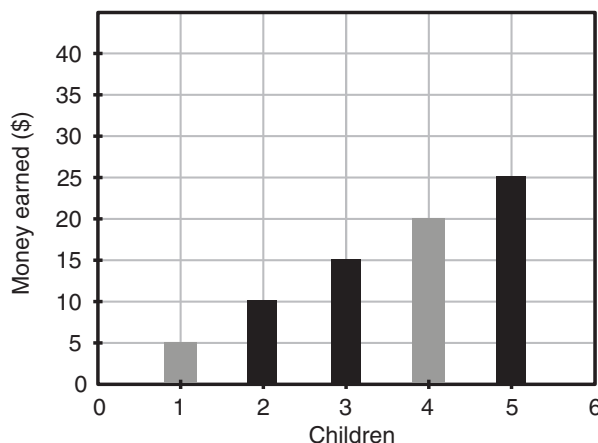
A. Fill in the table below to determine how much money Tony earned.

| Children | Money Earned |
|----------|--------------|
| 1        | \$5          |
| 2        | \$10         |
| 3        | \$15         |
| 4        | \$20         |
| 5        | \$25         |

B. Write an equation that illustrates the relationship between the number of children ( $c$ ) and the money earned ( $m$ ):

$$m = 5c$$

C. Make a bar graph for the amount of money earned:



A. exact answer, 1 | 1  
points per box 2 | 2  
3 | 3

B. exact answer, 1 | 1  
points per line 4 | 4

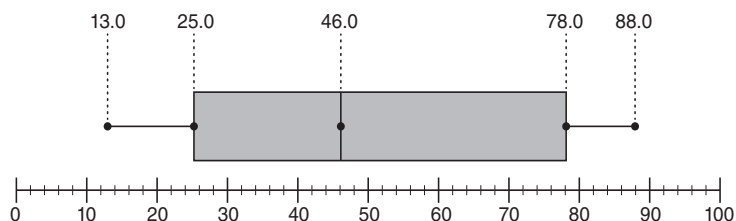
C. exact answer, 1 | 1  
points per segment 2 | 2  
(each bar graphed) 3 | 3

12. You went shopping at the mall and bought 7 shirts for \$49. If all of the shirts cost the same, what is the cost of each shirt?

\$ 7 per shirt.

correct digits 1 | 4

13. Below is the number of books a group of students read over the summer:



What is the range of books read over the summer? 75

What is the median number of books read over the summer? 46

What is the maximum number of books read over the summer? 88

exact answer, 1 | 2  
points per line 2 | 4  
3 | 6

14. Diver A dove to a sea level depth of -28 feet. Diver B dove to -35 feet.

Which diver dove deeper? Diver B

Diver A was how many feet under water? 28 feet

exact answer, 1 | 1  
points per line 2 | 2

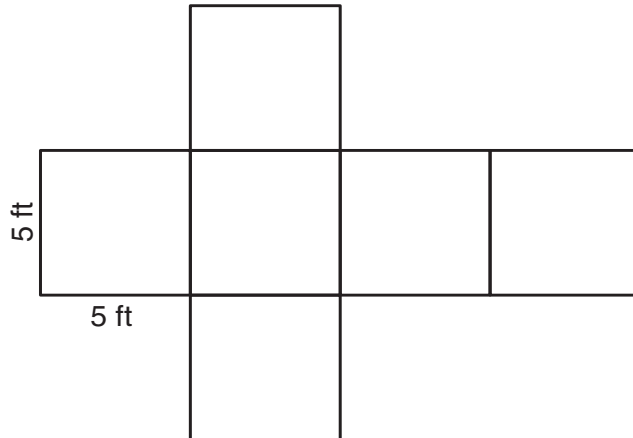
15.

$$4^3 = \underline{64}$$

correct digits 1 | 4  
2 | 9

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**Grade 6 / Benchmark 1 / Teacher Key**

16. David wanted to figure out the surface area of the tool shed behind his house. What is the surface area of the tool shed? 150 ft<sup>2</sup>.



correct digits  $\begin{array}{r|l} 1 & 3 \\ 2 & 7 \\ 3 & 10 \end{array}$

17. Mateo can run 5 miles in 70 minutes. If he runs at a constant speed, how long would it take him to run 4 miles? 56 minutes.

correct digits  $\begin{array}{r|l} 1 & 5 \\ 2 & 10 \end{array}$

18. What is the greatest common factor of 54 and 30? 6

exact answer,  
points per line 1 | 8

19. Our class is playing basketball. Santiago made 6 fewer than 4 times the baskets that Ross made.

Let  $R$  = the number of baskets that Ross made.

Write an equation using  $x$  that describes how many baskets Santiago made.  $X = 4R - 6$   
 or equivalent

exact answer,  
points per line 1 | 5

20. In the mountains it was  $-3^{\circ}\text{C}$ . At the coast it was  $13^{\circ}\text{C}$ . Write an inequality to show the relationship between these temperatures:

$-3^{\circ} < 13^{\circ}$

exact answer,  
points per line 1 | 4

**Scoring Direction**

Right to Left  
or

Left to Right

# Acadience® Math / Concepts and Applications Grade 6 / Benchmark 2 / Teacher Key

Total: \_\_\_\_\_

1. At the zoo there were 17 lions and 24 monkeys. What is the ratio of lions to monkeys? 17 : 24  
or equivalent

exact answer,  
points per line 1 | 2

2. Erica has taken several math quizzes since the start of school. The following are her scores: **6, 7, 9, 7, 1**.

A. What is the mean of Erica's quiz scores? 6

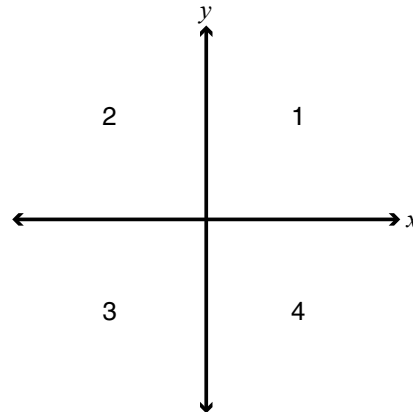
B. What is the median of Erica's quiz scores? 7

A: correct digits 1 | 11

B. exact answer,  
points per line 1 | 5

3. Fill in the missing quadrants to complete the table:

| Point    | Quadrant |
|----------|----------|
| (3, 8)   | <u>1</u> |
| (-7, -6) | <u>3</u> |
| (3, -7)  | 4        |
| (-9, 8)  | <u>2</u> |



exact answer, 1 | 1  
points per box 2 | 2  
3 | 3

4. A. Write an expression for **3 subtracted from x**:  $x - 3$

A. exact answer,  
points per line 1 | 3

B. Write an expression for **7 added to x**:  $7 + x$   
or equivalent

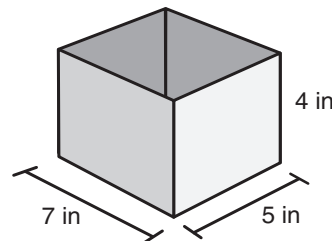
B. exact answer,  
points per line 1 | 3

5. Hannah has a box and a bag of blocks. The blocks are  $\frac{1}{2}$  inch by  $\frac{1}{2}$  inch by  $\frac{1}{2}$  inch.

A. What is the volume of the box? 140 in<sup>3</sup>.

B. How many blocks will fit inside Hannah's box?

1,120 blocks.



A. correct digits 1 | 3  
2 | 6  
3 | 10

B. correct digits 1 | 7  
2 | 13  
3 | 19  
4 | 26

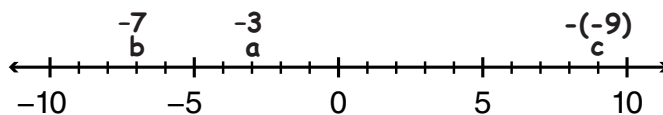
6. It takes Mia 2 weeks to make 4 scarves. At this rate, how long will it take her to make 6 scarves? 3 week(s).

correct digits 1 | 6

**Acadience® Math / Concepts and Applications**  
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7. Label the following numbers on the number line below:

- a.  $-3$   
 b.  $-7$   
 c.  $-(-9)$



exact answer, 1 | 1  
 points per segment 2 | 2  
 (each labeled number) 3 | 3

8. Write "True" if the substitution makes the inequality true or write "False" if the substitution makes the inequality false:

| Inequality      | $x =$ | Write True or False |
|-----------------|-------|---------------------|
| $44x - 5 < 100$ | 3     | False               |
| $26x + 7 < 100$ | 4     | False               |

exact answer, 1 | 3  
 points per box 2 | 6

9. Complete the ratio table:

|           |           |
|-----------|-----------|
| 3         | 9         |
| <b>6</b>  | <b>18</b> |
| 9         | 27        |
| 12        | <b>36</b> |
| <b>15</b> | 45        |

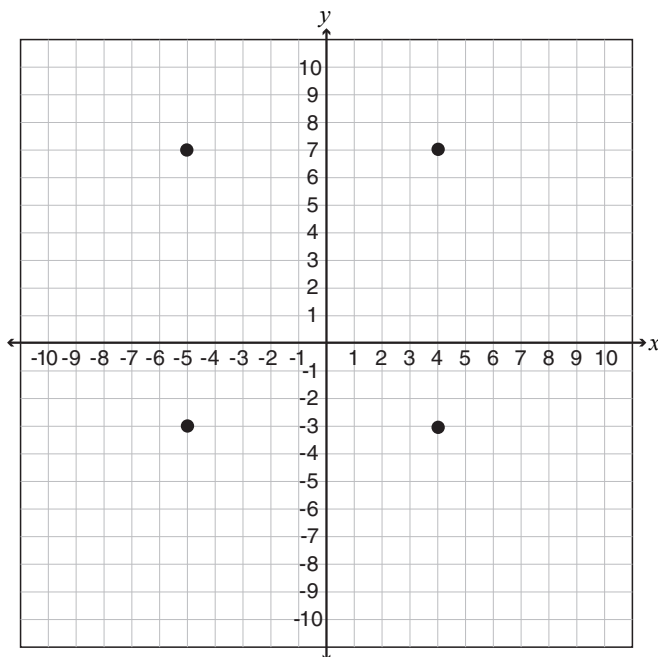
exact answer, 1 | 1  
 points per box 2 | 2  
 3 | 3  
 4 | 4

10. Dean is plotting the points of ships on a graph.

The ships are located at  $(4, 7)$ ,  $(4, -3)$ ,  $(-5, -3)$ .

A. If the vertices form a rectangle, find the location of the last vertex: ( -5, 7 )

B. Plot all the vertices on the graph:



A. exact answer, 1 | 1  
 points per line 2 | 2

B. points per segment 1 | 1  
 2 | 2  
 3 | 3  
 (correct points plotted) 4 | 4

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**Grade 6 / Benchmark 2 / Teacher Key**

11. Martin is paid for delivering newspapers on the weekend. He earns \$25 per street.

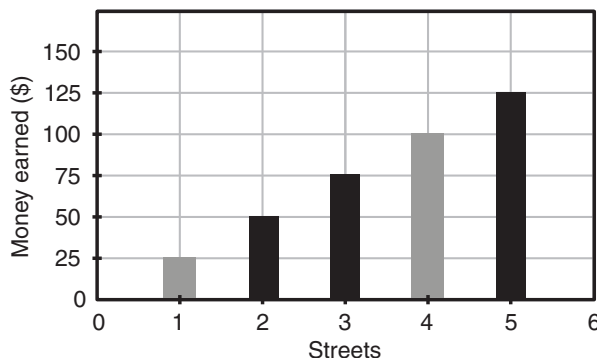
A. Fill in the table below to determine how much money Martin earned.

| Streets | Money Earned |
|---------|--------------|
| 1       | \$25         |
| 2       | <b>\$50</b>  |
| 3       | <b>\$75</b>  |
| 4       | \$100        |
| 5       | <b>\$125</b> |

B. Write an equation that illustrates the relationship between the number of streets ( $s$ ) and the money earned ( $m$ ):

**$m = 25s$**

C. Make a bar graph for the amount of money earned:



A. exact answer,  $\frac{1}{2}$  | **1**  
 points per box 3 | **3**

B. exact answer, points per line 1 | **4**

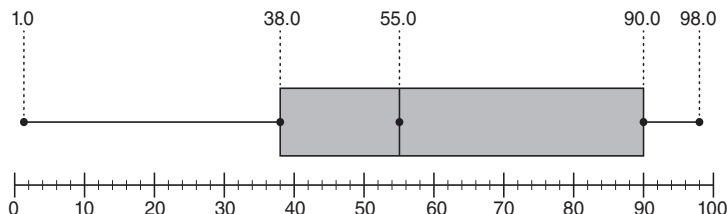
C. exact answer, points per segment  $\frac{1}{2}$  | **1**  
 (each bar graphed) 3 | **3**

12. You went to the bookstore and bought 5 books for \$20. If all the books cost the same, what is the cost of each book?

\$ **4** per book.

correct digits 1 | **4**

13. Below are the number of minutes students in a class spent on homework:



What is the range of the minutes spent on homework? **97**

What is the median number of minutes spent on homework? **55**

What is the maximum number of minutes spent on homework? **98**

exact answer,  $\frac{1}{2}$  | **2**  
 points per line 3 | **4**

14. Diver A dove to a sea level depth of -20 feet. Diver B dove to -55 feet.

Which diver dove deeper? **Diver B**

Diver A was how many feet under the water? **20** feet

exact answer, points per line  $\frac{1}{2}$  | **1**  
 2 | **2**

15.  $3^3 =$  **27**

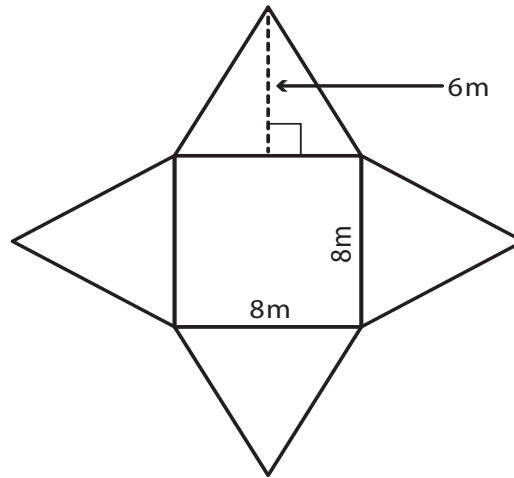
correct digits  $\frac{1}{2}$  | **3**  
 2 | **7**



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16. Tanya wanted to figure out the surface area of a pyramid. What is the surface area of the pyramid?

160 m<sup>2</sup>.



correct digits 

|   |    |
|---|----|
| 1 | 7  |
| 2 | 15 |
| 3 | 23 |

17. Joe can run 6 miles in 54 minutes. If he runs at a constant speed, how long will it take him to run 8 miles?

72 minutes.

correct digits 

|   |   |
|---|---|
| 1 | 4 |
| 2 | 8 |

18. What is the greatest common factor of 30 and 24? 6

exact answer,  
points per line 

|   |   |
|---|---|
| 1 | 8 |
|---|---|

19. Beth scores 8 more than 7 times the soccer goals that Jack scored.

Let  $J$  = the number of goals that Jack scored.

Write an equation using  $x$  that describes how many goals Beth scored.  $X = 7J + 8$   
or equivalent

exact answer,  
points per line 

|   |   |
|---|---|
| 1 | 5 |
|---|---|

20. At Sam's house it was 6°F. At Mary's house it was -8°F. Write an inequality to show the relationship between these temperatures:

$-8^{\circ} < 6^{\circ}$

exact answer,  
points per line 

|   |   |
|---|---|
| 1 | 4 |
|---|---|

**Scoring Direction**

Right to Left  
or

Left to Right

# Acadience® Math / Concepts and Applications Grade 6 / Benchmark 3 / Teacher Key

Total: \_\_\_\_\_

1. There were 16 giraffes and 18 hippos. What is the ratio of giraffes to hippos? 16 : 18  
or equivalent

exact answer,  
points per line 1 | 2

2. Cara helps her neighbors with chores every week. The following are the number of neighbors she has helped each week:  
**9, 5, 1, 8, 7.**

A. What is the mean number of neighbors that Cara helped? 6

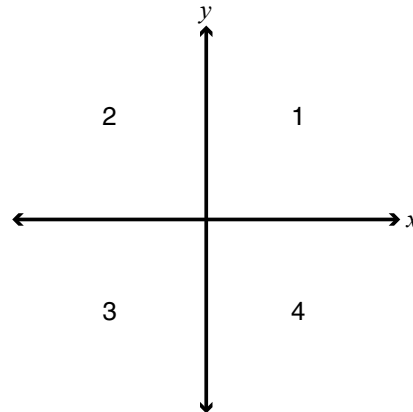
A: correct digits 1 | 11

B. What is the median number of neighbors that Cara helped? 7

B. exact answer,  
points per line 1 | 5

3. Fill in the missing quadrants to complete the table:

| Point    | Quadrant |
|----------|----------|
| (-4, -5) | <b>3</b> |
| (-7, 9)  | <b>2</b> |
| (8, -7)  | 4        |
| (1, 1)   | <b>1</b> |



exact answer, 1 | 1  
points per box 2 | 2  
3 | 3

4. A. Write an expression for **3 subtracted from x**:  $x - 3$

A. exact answer,  
points per line 1 | 3

B. Write an expression for **9 added to x**:  $9 + x$   
or equivalent

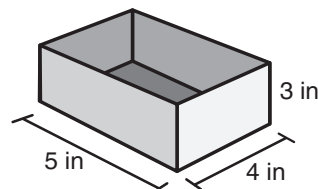
B. exact answer,  
points per line 1 | 3

5. Ethan has a box and a bag of blocks. The blocks are  $\frac{1}{2}$  inch by  $\frac{1}{2}$  inch by  $\frac{1}{2}$  inch.

A. What is the volume of the box? 60 in<sup>3</sup>.

B. How many blocks will fit inside Ethan's box?

480 blocks.



A. correct digits 1 | 4  
2 | 9

B. correct digits 1 | 7  
2 | 14  
3 | 21

6. Josh can write 4 short stories in 2 weeks. At this rate, how long will it take him to write 8 short stories? 4 week(s).

correct digits 1 | 6

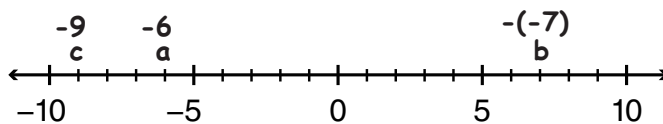
**Acadience® Math / Concepts and Applications**  
**Grade 6 / Benchmark 3 / Teacher Key**

7. Label the following numbers on the number line below:

a. -6

b. -(-7)

c. -9



exact answer, 1 | 1  
 points per segment 2 | 2  
 (each labeled number) 3 | 3

8. Write "True" if the substitution makes the inequality true or write "False" if the substitution makes the inequality false:

| Inequality      | $x =$ | Write True or False |
|-----------------|-------|---------------------|
| $21x - 9 < 100$ | 6     | False               |
| $23x + 6 < 100$ | 2     | True                |

exact answer, 1 | 3  
 points per box 2 | 6

9. Complete the ratio table:

|           |           |
|-----------|-----------|
| 4         | 9         |
| <b>8</b>  | <b>18</b> |
| 12        | 27        |
| 16        | <b>36</b> |
| <b>20</b> | 45        |

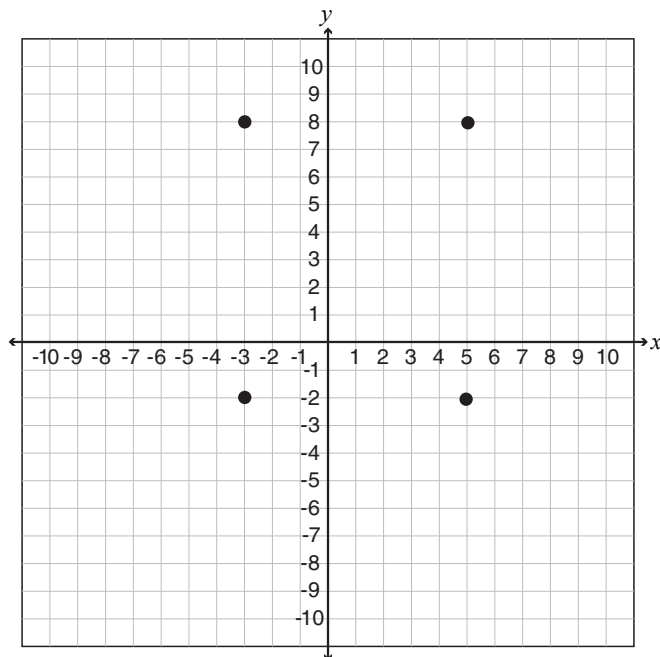
exact answer, 1 | 1  
 points per box 2 | 2  
 3 | 3  
 4 | 4

10. Tony is plotting the location of trees on a graph.

The trees are located at (5, 8), (5, -2), and (-3, -2).

A. If the vertices form a rectangle, find the location of the last vertex: ( -3, 8 )

B. Plot all the vertices on the graph:



A. exact answer, 1 | 1  
 points per line 2 | 2

B. points per segment 1 | 1  
 (correct points plotted) 2 | 2  
 3 | 3  
 4 | 4

**Acadience® Math / Concepts and Applications**  
**Grade 6 / Benchmark 3 / Teacher Key**

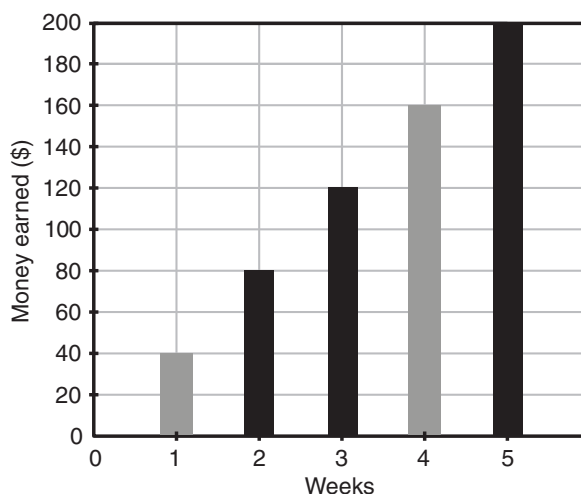
11. Nick earns \$40 per week at his part time job.

A. Fill in the table below to determine how much money Nick earned.

| Week | Money Earned |
|------|--------------|
| 1    | \$40         |
| 2    | <b>\$80</b>  |
| 3    | <b>\$120</b> |
| 4    | \$160        |
| 5    | <b>\$200</b> |

B. Write an equation that illustrates the relationship between the number of weeks ( $w$ ) and the money earned ( $m$ ):  $m = 40w$

C. Make a bar graph for the amount of money earned:



A. exact answer,  $\frac{1}{2}$  | **1**  
 points per box 3 | **3**

B. exact answer, points per line 1 | **4**

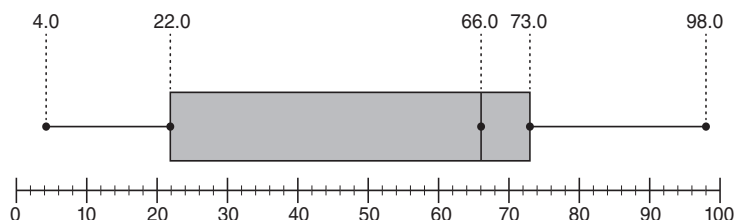
C. exact answer, points per segment  $\frac{1}{2}$  | **1**  
 (each bar graphed) 3 | **3**

12. You bought 6 shirts for \$48. If all the shirts cost the same, what is the cost of each shirt?

\$ 8 per shirt.

correct digits 1 | **4**

13. Below are the number of games students in a class played over the summer:



What is the range of games played over the summer? 94

What is the median number of games played over the summer? 66

What is the maximum number of games played over the summer? 98

exact answer,  $\frac{1}{2}$  | **2**  
 points per line 3 | **6**

14. Diver A dove to a sea level depth of -24 feet. Diver B dove to -10 feet.

Which diver dove deeper? Diver A

Diver A was how many feet under water? 24 feet

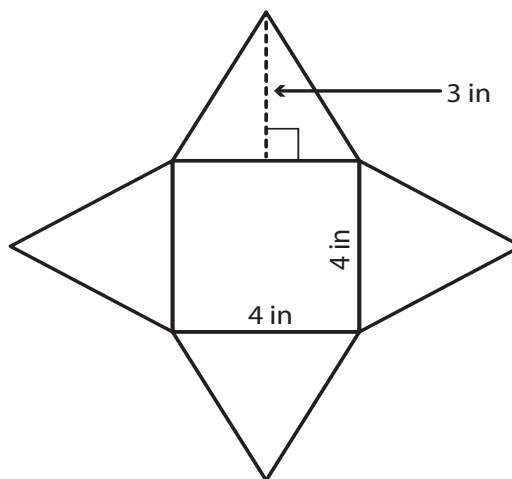
exact answer,  $\frac{1}{2}$  | **1**  
 points per line 2 | **2**

15.  $4^2 =$  16

correct digits  $\frac{1}{2}$  | **2**  
 2 | **4**

**Acadience® Math / Concepts and Applications**  
**Grade 6 / Benchmark 3 / Teacher Key**

16. Steve wanted to figure out the surface area of a rock shaped like a pyramid. What is the surface area of the rock? 40 in<sup>2</sup>.



correct digits  $\frac{1}{2} \mid \frac{10}{20}$

17. Joe runs 2 miles in 12 minutes. If he runs at a constant speed, how long will it take him to run 9 miles?  
54 minutes.

correct digits  $\frac{1}{2} \mid \frac{4}{8}$

18. What is the greatest common factor of 44 and 18? 2

exact answer,  
points per line  $1 \mid 9$

19. Mike read 8 more than 7 times the books that John read.

Let  $J$  = the number of books that John read.

Write an equation using  $x$  that describes how many books Mike read.  $X = 7J + 8$   
 or equivalent

exact answer,  
points per line  $1 \mid 5$

20. Dan's house is 8 feet below sea level. Mary's house is 4 feet above sea level. Write an inequality to show the relationship between these houses:

$-8 < 4$

exact answer,  
points per line  $1 \mid 4$