

# acadiance<sup>®</sup>math

## Concepts and Applications Grade 6 | Benchmark Assessment

### Student Worksheets

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## Concepts and Applications / Grade 6

Name: \_\_\_\_\_ Student ID: \_\_\_\_\_

Teacher: \_\_\_\_\_ School: \_\_\_\_\_ School Year: \_\_\_\_\_

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

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

1. At the aquarium there were 24 zebra fish and 61 clown fish. What is the ratio of zebra fish to clown fish? \_\_\_\_\_

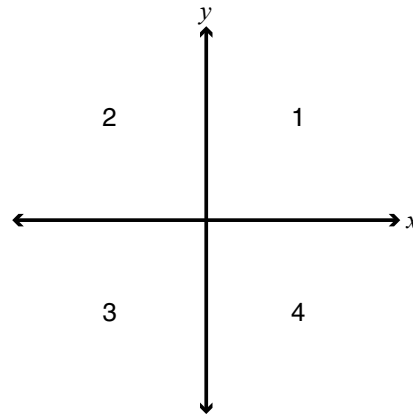
2. Doug delivers papers to houses on the weekends. The following are the number of papers that Doug delivered: **5, 2, 9, 9, 5**.

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

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

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

Point	Quadrant
$(-5, 7)$	
$(-5, -5)$	
$(4, -7)$	4
$(1, 7)$	



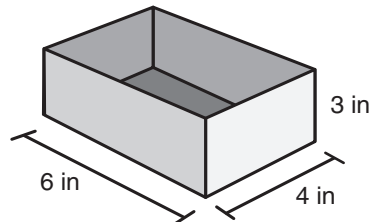
4. A. Write an expression for **8 subtracted from  $x$** : \_\_\_\_\_

B. Write an expression for **5 added to  $x$** : \_\_\_\_\_

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? \_\_\_\_\_ in<sup>3</sup>.

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



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? \_\_\_\_\_ week(s).

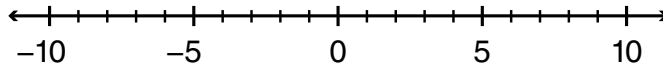
**Acadience® Math / Concepts and Applications**  
**Grade 6 / Benchmark 1**

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

a.  $-(-3)$

b.  $-6$

c.  $-2$



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	
$27x + 8 < 100$	9	

9. Complete the ratio table:

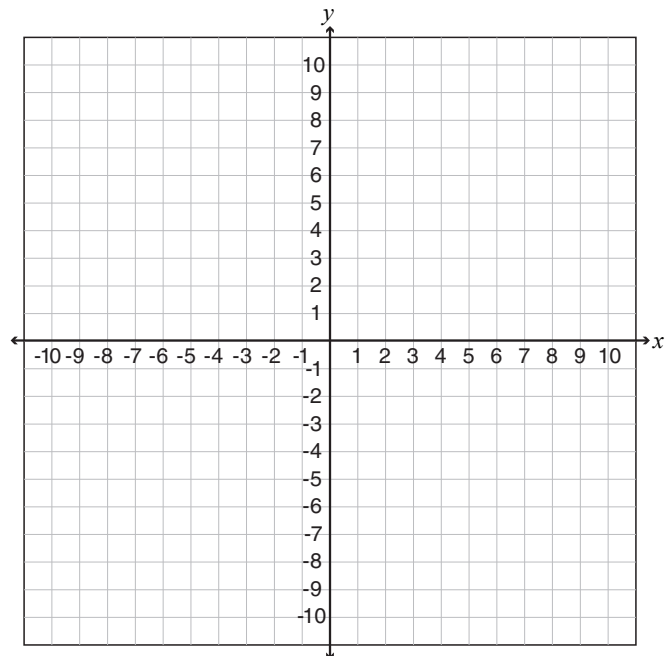
3	15
9	45
12	
	75

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: ( \_\_\_\_\_, \_\_\_\_\_ )

B. Plot all the vertices on the graph:



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## Grade 6 / Benchmark 1

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

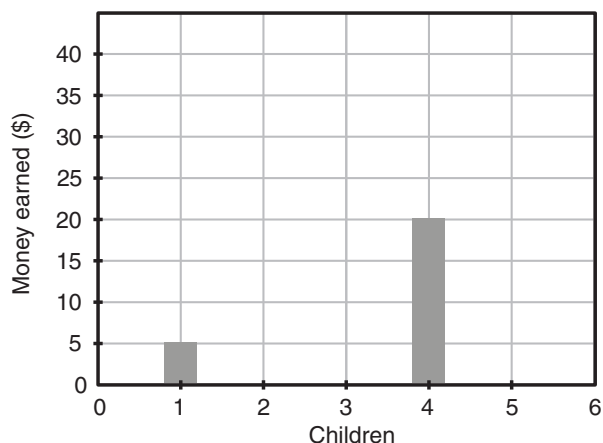
A. Fill in the table below to determine how much money Tony earned.

Children	Money Earned
1	\$5
2	
3	
4	\$20
5	

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

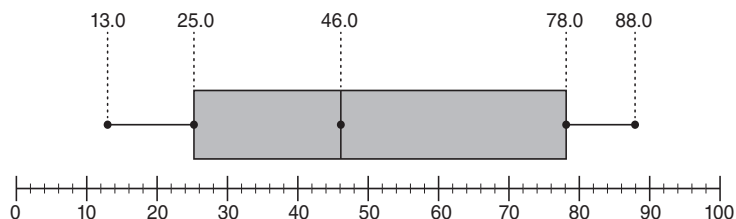
\_\_\_\_\_

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



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?  
\$\_\_\_\_\_ per shirt.

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? \_\_\_\_\_

What is the median number of books read over the summer? \_\_\_\_\_

What is the maximum number of books read over the summer? \_\_\_\_\_

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

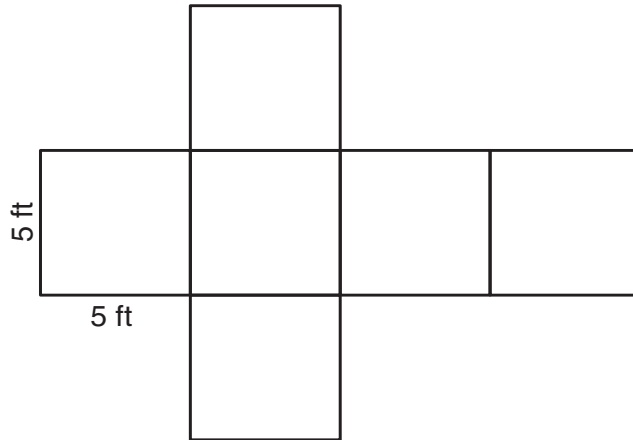
Which diver dove deeper? \_\_\_\_\_

Diver A was how many feet under water? \_\_\_\_\_ feet

15.  $4^3 =$  \_\_\_\_\_

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**Grade 6 / Benchmark 1**

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? \_\_\_\_\_  $\text{ft}^2$ .



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? \_\_\_\_\_ minutes.

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

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. \_\_\_\_\_

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:

\_\_\_\_\_

**Acadience® Math / Concepts and Applications**  
**Grade 6 / Benchmark 2**

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

1. At the zoo there were 17 lions and 24 monkeys. What is the ratio of lions to monkeys? \_\_\_\_\_

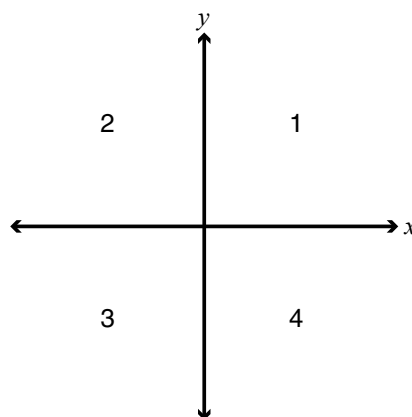
2. Erica has taken several math quizzes since the start of school. The following are her scores: **6, 7, 9, 7, 1**.

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

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

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

Point	Quadrant
(3, 8)	
(-7, -6)	
(3, -7)	4
(-9, 8)	



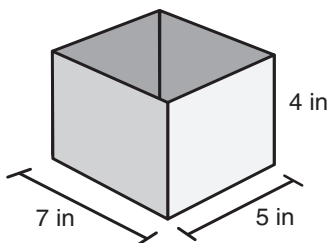
4. A. Write an expression for **3 subtracted from  $x$** : \_\_\_\_\_

B. Write an expression for **7 added to  $x$** : \_\_\_\_\_

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? \_\_\_\_\_ in<sup>3</sup>.

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



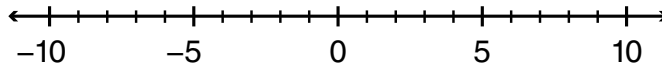
6. It takes Mia 2 weeks to make 4 scarves. At this rate, how long will it take her to make 6 scarves? \_\_\_\_\_ week(s).

# Acadience® Math / Concepts and Applications

## Grade 6 / Benchmark 2

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

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



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	
$26x + 7 < 100$	4	

9. Complete the ratio table:

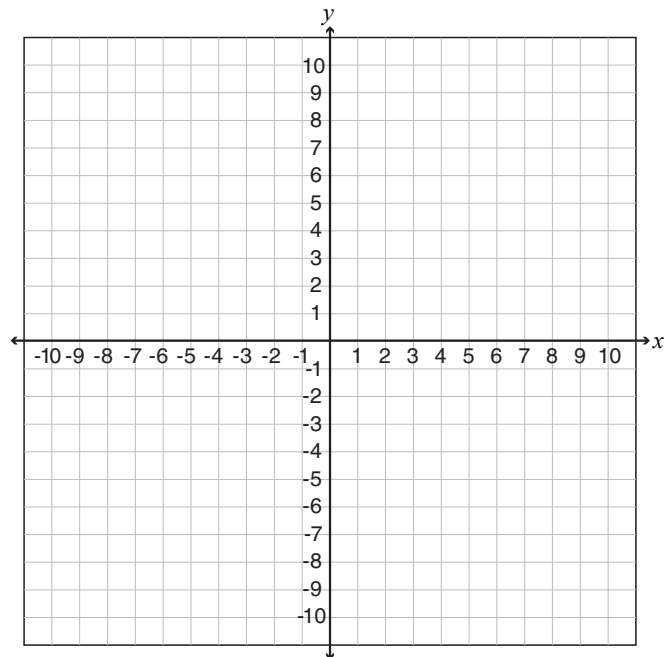
3	9
9	27
12	
	45

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: ( \_\_\_\_\_, \_\_\_\_\_ )

B. Plot all the vertices on the graph:





# Acadience® Math / Concepts and Applications

## Grade 6 / Benchmark 2

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

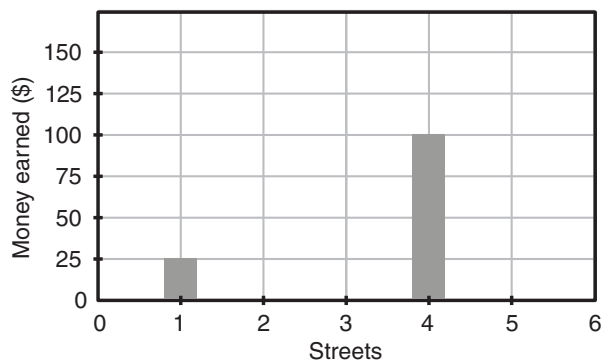
A. Fill in the table below to determine how much money Martin earned.

Streets	Money Earned
1	\$25
2	
3	
4	\$100
5	

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

\_\_\_\_\_

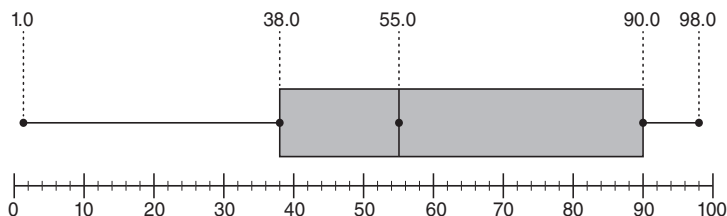
C. Make a bar graph for the amount of money earned:



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?

\$\_\_\_\_\_ per book.

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



What is the range of the minutes spent on homework? \_\_\_\_\_

What is the median number of minutes spent on homework? \_\_\_\_\_

What is the maximum number of minutes spent on homework? \_\_\_\_\_

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

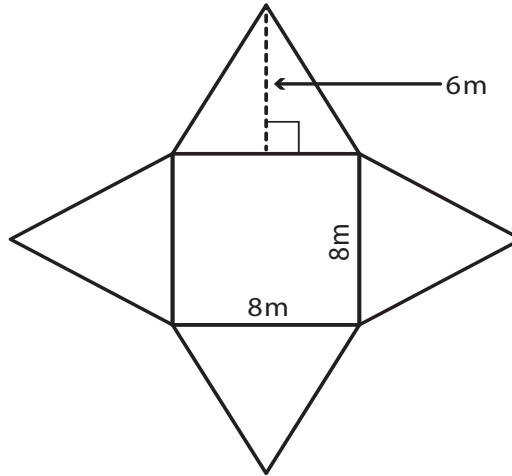
Which diver dove deeper? \_\_\_\_\_

Diver A was how many feet under the water? \_\_\_\_\_ feet

15.  $3^3 =$  \_\_\_\_\_

**Acadience® Math / Concepts and Applications**  
**Grade 6 / Benchmark 2**

16. Tanya wanted to figure out the surface area of a pyramid. What is the surface area of the pyramid?  
\_\_\_\_\_  $\text{m}^2$ .



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?  
\_\_\_\_\_ minutes.

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

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. \_\_\_\_\_

20. At Sam's house it was  $6^{\circ}\text{F}$ . At Mary's house it was  $-8^{\circ}\text{F}$ . Write an inequality to show the relationship between these temperatures:

\_\_\_\_\_

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

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

1. There were 16 giraffes and 18 hippos. What is the ratio of giraffes to hippos? \_\_\_\_\_

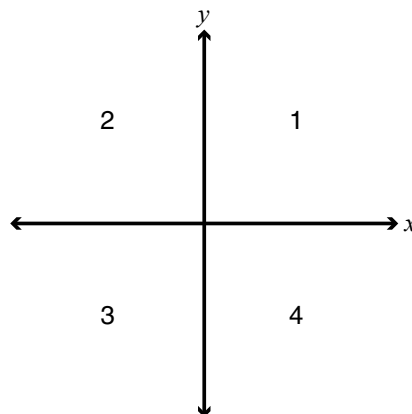
2. Cara helps her neighbors with chores every week. The following are the number of neighbors she has helped each week:  
**9, 5, 1, 8, 7.**

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

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

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

Point	Quadrant
$(-4, -5)$	
$(-7, 9)$	
$(8, -7)$	4
$(1, 1)$	



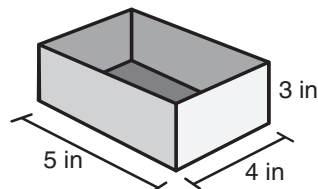
4. A. Write an expression for **3 subtracted from  $x$** : \_\_\_\_\_

B. Write an expression for **9 added to  $x$** : \_\_\_\_\_

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? \_\_\_\_\_  $\text{in}^3$ .

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

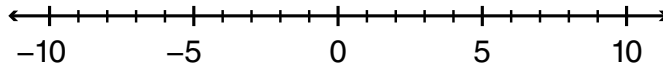


6. Josh can write 4 short stories in 2 weeks. At this rate, how long will it take him to write 8 short stories? \_\_\_\_\_ week(s).

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

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

- a.  $-6$
- b.  $-(-7)$
- c.  $-9$



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	
$23x + 6 < 100$	2	

9. Complete the ratio table:

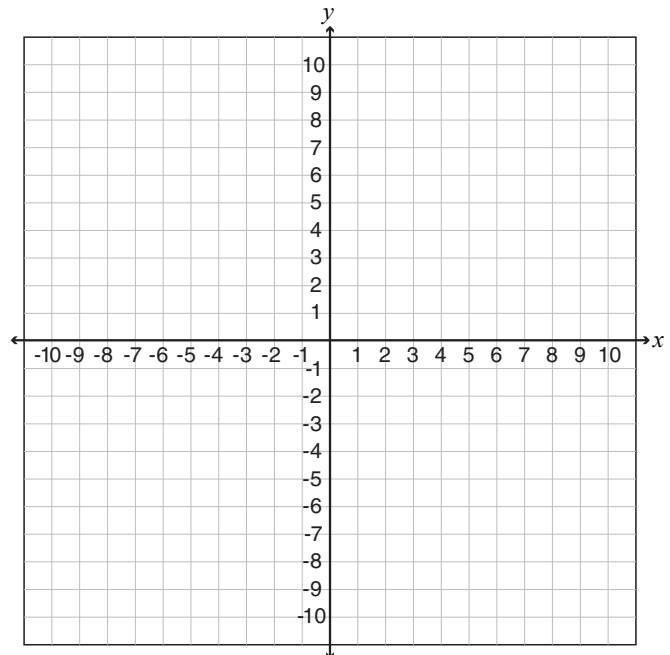
4	9
12	27
16	
	45

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: ( \_\_\_\_\_, \_\_\_\_\_ )

B. Plot all the vertices on the graph:



# Acadience® Math / Concepts and Applications

## Grade 6 / Benchmark 3

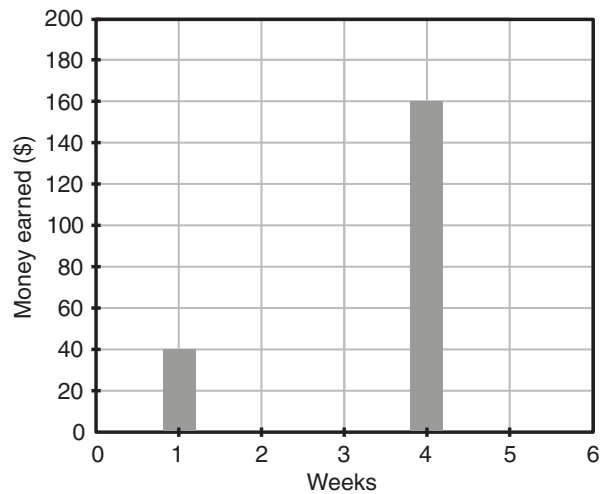
11. Nick earns \$40 per week at his part time job.

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

Week	Money Earned
1	\$40
2	
3	
4	\$160
5	

B. Write an equation that illustrates the relationship between the number of weeks ( $W$ ) and the money earned ( $m$ ): \_\_\_\_\_

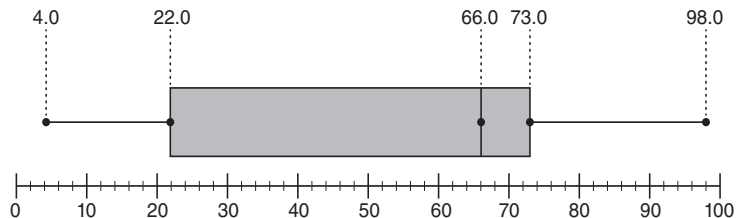
C. Make a bar graph for the amount of money earned:



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

\$\_\_\_\_\_ per shirt.

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? \_\_\_\_\_

What is the median number of games played over the summer? \_\_\_\_\_

What is the maximum number of games played over the summer? \_\_\_\_\_

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

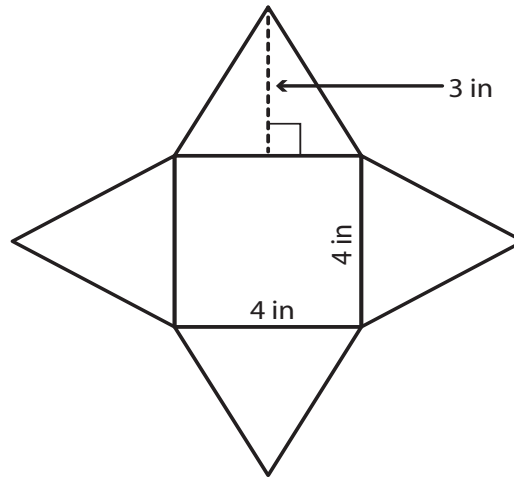
Which diver dove deeper? \_\_\_\_\_

Diver A was how many feet under water? \_\_\_\_\_ feet

15.  $4^2 =$  \_\_\_\_\_

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

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



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?  
\_\_\_\_\_ minutes.

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

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. \_\_\_\_\_

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:

\_\_\_\_\_