

Name: \_\_\_\_\_

Class/Period: \_\_\_\_\_

Assignment: MM ALGEBRA ASSIGNMENT 4

Teacher: Villegas

1 Solve for  $h$ :

$$(h \times 3) + 10 = 49$$

$$h = \boxed{\phantom{000}}$$

2 Solve for  $x$ :  $0.5x + 3 = 4.5$

1  $-3$

2  $-5$

3  $3$

4  $-5$

3 Combine like terms to simplify  $3x + 5 + 2x$ .

1  $5x + 5$

2  $3x + 7$

3  $x + 5$

4  $3x + 2$

4 What is the value of  $n$  that satisfies the equation below?

$$7(n + 1) - 2(4n - 3) = -1$$

1  $-\frac{1}{5}$

2  $-2$

3  $12$

4  $14$

- 5 Before leaving math class, students were instructed to select a pair of cards from a deck that represented the same situation. Four students pairs are shown below:

**Student 1:**

$$y = 3x + 50$$

A student went trick or treating and received 50 pieces of candy.  
He decided that he would eat 3 per day.

**Student 2:**

$$b = 10w + 60$$

A student received 60 dollars for a birthday gift.  
He decided that he put the \$60 into a savings account.  
Then, he decides to deposit \$10 each week.

**Student 3:**

$$t = 20s$$

A student is studying for final exams.  
She decides she will answer 20 questions each time she stays after school with her teacher to study.

**Student 4:**

$$q = 0.25d$$

A student is selling a collection of seashells at a yard sale.  
Each seashell is being sold for 25 cents.

Which student did not find a pair of cards that represent the same situation?

- 1 Student 1
- 2 Student 2
- 3 Student 3
- 4 Student 4

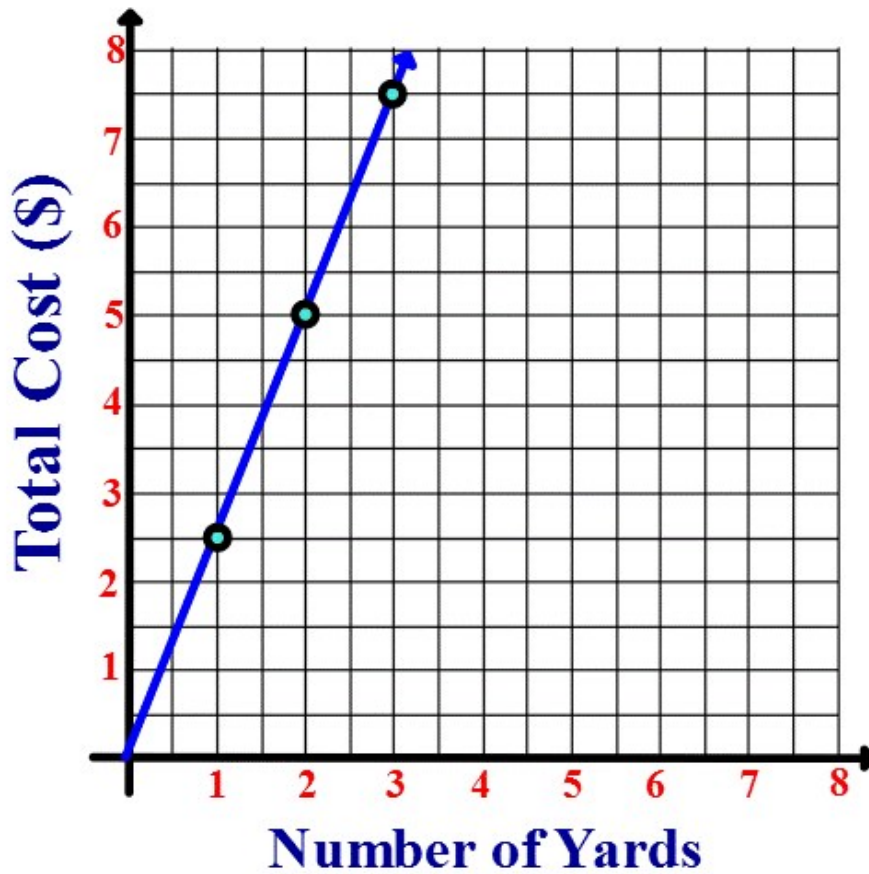
- 6 In the four situations below, let  $f$  stand for the number of yards of fabric and  $c$  for the total cost in dollars. Select the three options that represent the same situation.

$f$	$c$
0	8
1	10.50
2	13
3	15.50
4	18



- Jacee is making a blanket. She goes to the store to buy a sewing kit for eight dollars and fabric for \$2.50 per yard.

$c = 2.50f + 8$



7 What is the missing term in the input/output table?

$x$	$f(x) = x^2 - 5$
-2	-1
-1	
0	-5
1	-4

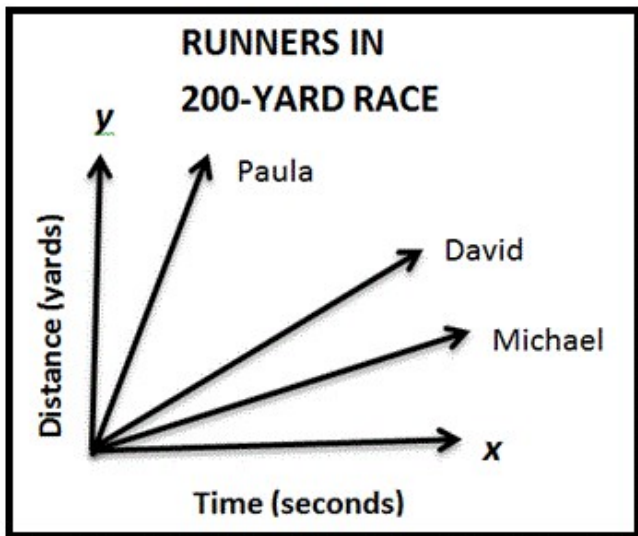
- 1 6
- 2 -5
- 3 0
- 4 -4

8 Given the function  $y = 2x + 2$ , which of the following sets of numbers are the correct values for  $y$  in the table below?

$x$	$y$
-3	
-2	
-1	
0	
1	

- 1 -4, -2, 0, 2, 4
- 2 8, 6, 4, 2, 4
- 3 4, 2, 0, 2, 4
- 4 7, 6, 5, 4, 5

9 The graph below shows the relationship between the distances run and the time for three people in a 200-yard race.



The relationship between the distance run and the time for David can be represented by the equation  $y = 16.45x$ , where he ran  $y$  yards in  $x$  seconds.

Which two equations could be used to represent the relationship for Michael and Paula?

- 1 Paula:  $y = 16.85x$  Michael:  $y = 16.55x$
- 2 Paula:  $y = 16.35x$  Michael:  $y = 16.25x$
- 3 Paula:  $y = 16.85x$  Michael:  $y = 16.35x$
- 4 Paula:  $y = 16.35x$  Michael:  $y = 16.85x$

10 Combine like terms to simplify the expression  $4m + 2n - m - n$ .

- 1  $5m + 3n$
- 2  $5m - 3n$
- 3  $3m + n$
- 4  $3m - n$

11 The solution of the equation  $5 - 2x = -4x - 7$  is

- 1 1
- 2 2
- 3 -2
- 4 -6

12 Simone spent \$74.52 at the store. She bought three shirts that all cost the same amount, plus she paid \$5.52 tax. What was the cost of each shirt?

Answer: \$

13 A sports club charges a one-time registration fee and a monthly membership fee. The total cost is modeled by the function  $y = 90 + 40x$ . Which statement represents the meaning of each part of the function?

- 1  $y$  is the total cost,  $x$  is the number of months of membership, \$90 is the monthly membership fee, and \$40 is the registration fee
- 2  $y$  is the total cost,  $x$  is the number of months of membership, \$40 is the monthly membership fee, and \$90 is the registration fee
- 3  $x$  is the total cost,  $y$  is the number of months of membership, \$90 is the monthly membership fee, and \$40 is the registration fee
- 4  $x$  is the total cost,  $y$  is the number of months of membership, \$40 is the monthly membership fee, and \$90 is the registration fee

14 What is the next term in the input/output table?

$x$	$P(x) = 2x + 4$
-2	0
-1	2
0	4
1	6
2	

- 1 26
- 2 12
- 3 8
- 4 6

**Figure 1**

Tickets to Croft Community School's play are selling for \$5 each with a service charge of \$2. The table shows the total cost  $C$  of purchasing  $t$  tickets.

Number of Tickets, $t$	Total Cost of tickets, $C$
1	\$7
2	\$12
3	?
4	\$22

**Refer to Figure 1 and answer the following Question:**

What is the total cost  $C$  for purchasing 3 tickets to the play?

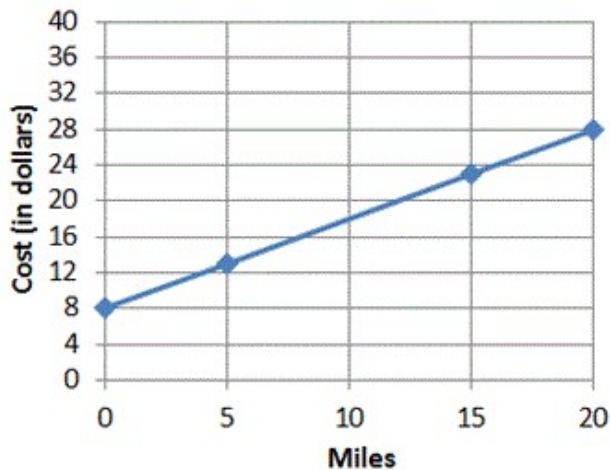
- 1 \$14
- 2 \$15
- 3 \$17
- 4 \$20

16 The sum of  $8n^2 - 3n + 10$  and  $-3n^2 - 6n - 7$  is

- 1  $5n^2 - 9n + 3$
- 2  $5n^2 - 3n - 17$
- 3  $-11n^2 - 9n - 17$
- 4  $-11n^2 - 3n + 3$

17 The relationship between the miles driven by a car service and the cost of the ride is shown in the graph below.

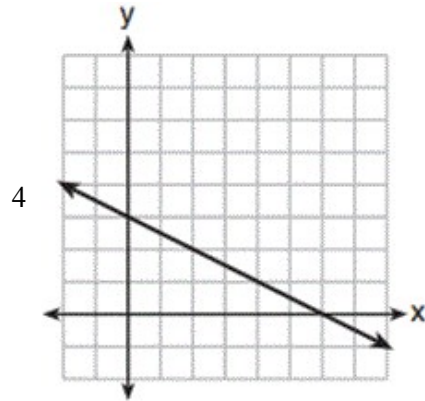
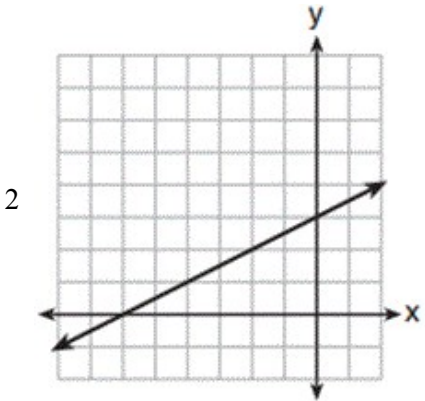
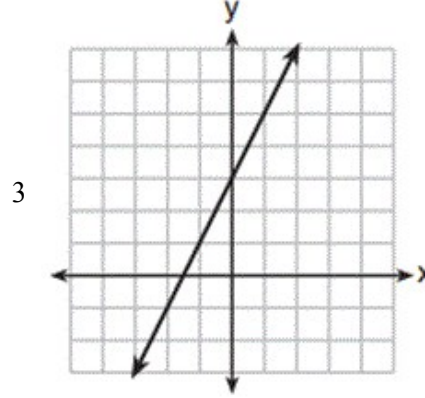
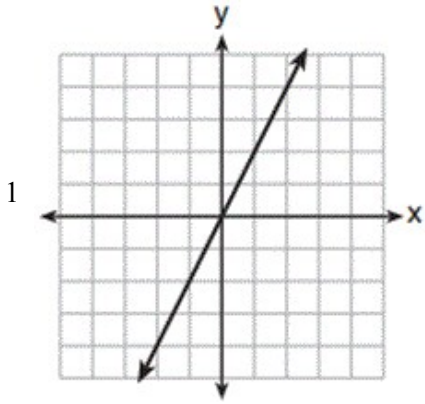
### Car Service Rates



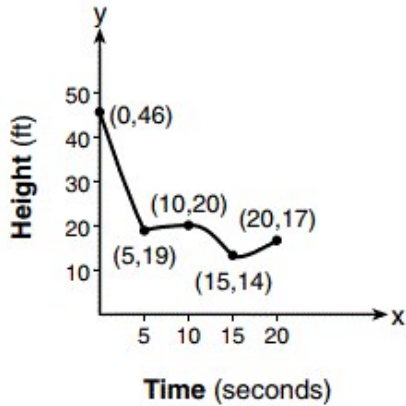
What is the meaning of the  $y$ -intercept?

- 1 The change in the cost for each mile driven.
- 2 The change in the miles for each dollar the ride costs.
- 3 The amount of miles driven when the cost is \$0.
- 4 The initial cost of the car service ride before any miles are driven.

18 Which graph shows a line where each value of  $y$  is twice  $x$ ?



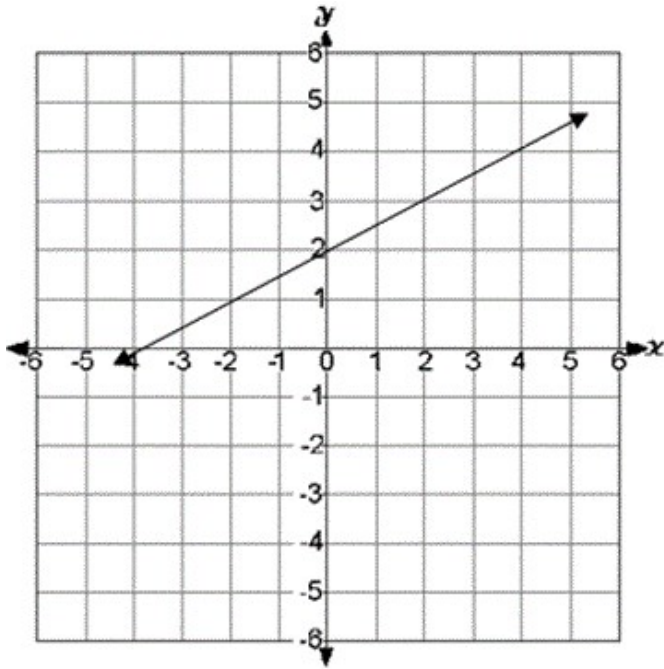
19 The graph below models the height of a remote-control helicopter over 20 seconds during flight.



Over which interval does the helicopter have the *slowest* average rate of change?

- 1 0 to 5 seconds
- 2 5 to 10 seconds
- 3 10 to 15 seconds
- 4 15 to 20 seconds

20 Function  $J$  is shown on the coordinate grid below.



If the  $y$ -intercept of Function  $R$  is  $\frac{3}{2}$  as great as the  $y$ -intercept of Function  $J$ , which equation could represent Function  $R$ ?

1  $y = \frac{3}{2}x + 3$

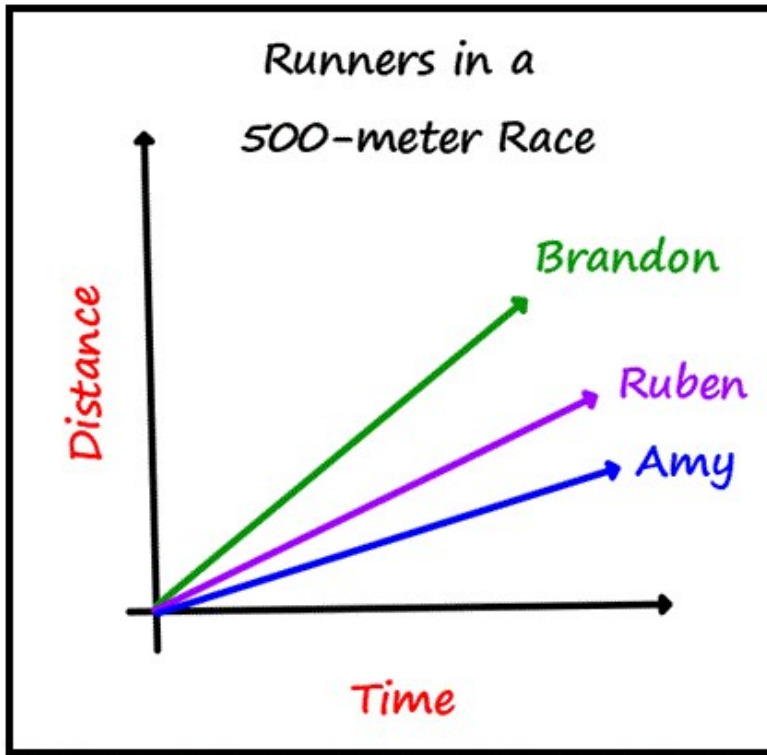
2  $y = 3x + \frac{3}{2}$

3  $y = 3x + 2$

4  $y = -\frac{2}{3}x$



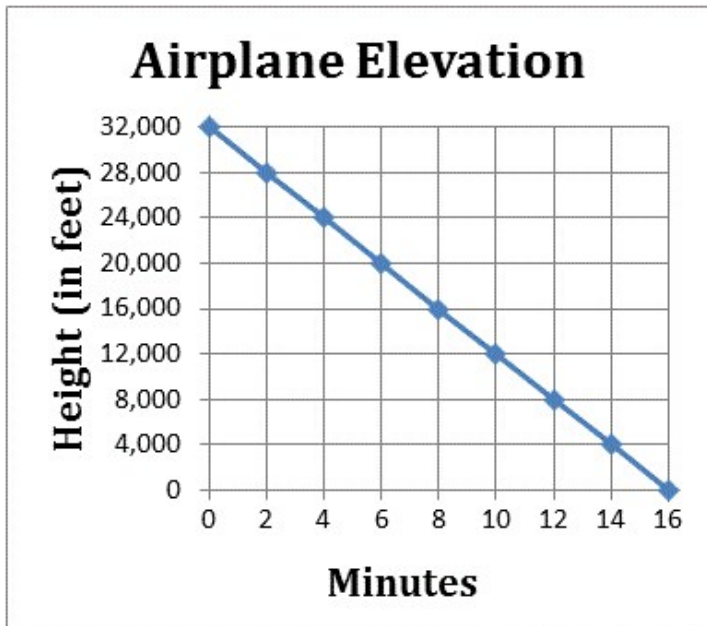
21 The graph below shows the relationship between the distances run and the time for three people in a 500-meter race.



The relationship between the distance run and the time for Amy can be represented by the equation  $y = 17.45x$ , where she ran  $y$  meters in  $x$  seconds. Which two equations could be used to represent the relationship for Brandon and Ruben?

- 1 Brandon:  $y = 17.15x$  Ruben:  $y = 17.25x$
- 2 Brandon:  $y = 17.25x$  Ruben:  $y = 17.65x$
- 3 Brandon:  $y = 17.65x$  Ruben:  $y = 17.25x$
- 4 Brandon:  $y = 17.85x$  Ruben:  $y = 17.65x$

- 22 The relationship between the height of an airplane and the time after the airplane begins its initial descent are shown in the graph below.



What is the meaning of the y-intercept?

- 1 The change in elevation for every minute that passes.
  - 2 The change in minutes for every one foot of elevation change.
  - 3 The height of an airplane when it begins its initial descent.
  - 4 The time it took for the airplane to reach the runway.
- 23 The expression  $w^4 - 36$  is equivalent to

- 1  $(w^2 - 18)(w^2 - 18)$
- 2  $(w^2 + 18)(w^2 - 18)$
- 3  $(w^2 - 6)(w^2 - 6)$
- 4  $(w^2 + 6)(w^2 - 6)$

- 24 If  $f(x) = 4x + 5$ , what is the value of  $f(-3)$ ?

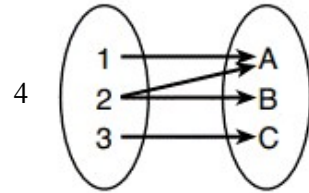
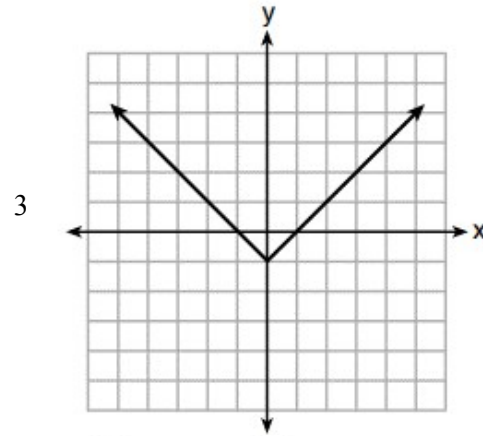
- 1 -2
- 2 -7
- 3 17
- 4 4

25 Which relation is *not* a function?

1

x	y
-10	-2
-6	2
-2	6
1	9
5	13

2  $3x + 2y = 4$



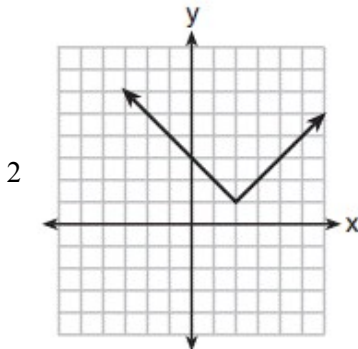
26 The math department needs to buy new textbooks and laptops for the computer science classroom. The textbooks cost \$116.00 each, and the laptops cost \$439.00 each. If the math department has \$6500 to spend and purchases 30 textbooks, how many laptops can they buy?

- 1 6
- 2 7
- 3 11
- 4 12

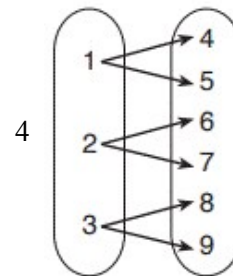
27 Which relation does *not* represent a function?

1

x	1	2	3	4	5	6
y	3.2	4	5.1	6	7.4	8.8



3  $y = 3\sqrt{x+1} - 2$



28 Britney is solving a quadratic equation. Her first step is shown below.

Problem:  $3x^2 - 8 - 10x = 3(2x + 3)$

Step 1:  $3x^2 - 10x - 8 = 6x + 9$

Which two properties did Britney use to get to step 1?

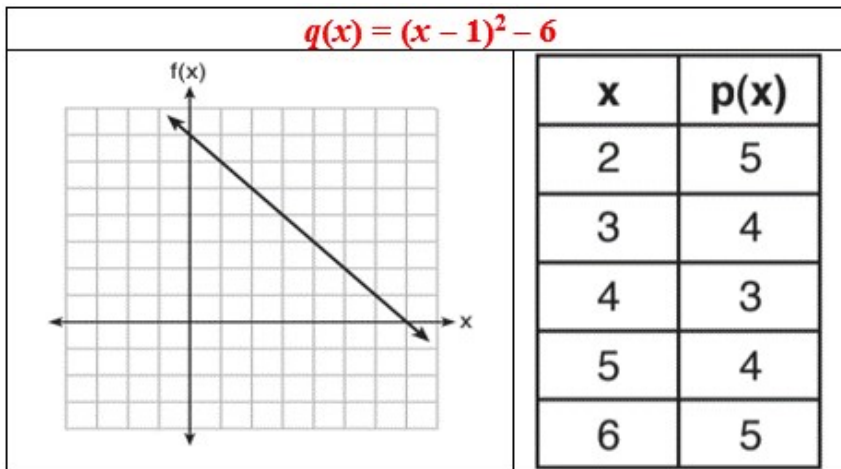
- I. addition property of equality
- II. commutative property of addition
- III. multiplication property of equality
- IV. distributive property of multiplication over addition

- 1 I and III
- 2 I and IV
- 3 II and III
- 4 II and IV

29 Which function could be used to represent the sequence 8, 20, 50, 125, 312.5, ..., given that  $a_1 = 8$ ?

- 1  $a_n = a_{n-1} + a_1$
- 2  $a_n = 2.5(a_{n-1})$
- 3  $a_n = a_1 + 1.5(a_{n-1})$
- 4  $a_n = (a_1)(a_{n-1})$

30 The functions  $f(x)$ ,  $q(x)$ , and  $p(x)$  are shown below.



When the input is 4, which functions have the same output value?

- 1  $f(x)$  and  $q(x)$ , only
- 2  $f(x)$  and  $p(x)$ , only
- 3  $q(x)$  and  $p(x)$ , only
- 4  $f(x)$ ,  $q(x)$ , and  $p(x)$