

Directions: Read each of the following questions carefully and choose the best answer.

A.CED.1

1) Which of the following tables represents a linear relationship?

a.

x	y
1	6
2	9
3	12
4	15

b.

x	y
1	6
2	9
3	13.5
4	20.25

c.

x	y
1	56
2	28
3	14
4	7

2) Using the tables in question #1, how do you know which table represents a linear relationship?

- When the y-value increases, then the relationship is linear.
- When the y-value decreases, then the relationship is linear.
- When the slope or rate of change is the same at every point, then the relationship is linear.
- You cannot determine from the table if the relationship is linear.

A.CED.1, A.CED.2

Use the following scenario to answer questions 3-7.

Rachel is getting married, but she is on a budget. She is buying her invitations and has narrowed it down to two stores, *Party Time* and *I Do Bridal*. *Party Time* charges a \$20 set up fee and then \$1.50 per invitation. *I Do Bridal* charges a \$40 set up fee and then \$1.00 per invitation.

- Create a mathematical model (equation) to represent the total cost if Rachel bought her invitations from *Party Time*. Let x represent the number of invitations.
  - Party Time* cost =  $20x$
  - Party Time* cost =  $20 + 1.5x$
  - Party Time* cost =  $1.5x$
  - Party Time* cost =  $40 + 1.5x$
- Create a mathematical model (equation) to represent the total cost if Rachel bought her invitations from *I Do Bridal*. Let x represent the number of invitations.
  - I Do Bridal* cost =  $x$
  - I Do Bridal* cost =  $40x$
  - I Do Bridal* cost =  $40 + x$
  - I Do Bridal* cost =  $20 + x$

5) If Rachel had a small wedding and only needed 35 invitations, which store would you recommend to her and why? (A.CED.3)

- I Do Bridal* because it is cheaper than *Party Time* if Rachel buys less than 40 invitations.
- I Do Bridal* because it will always be cheaper than *Party Time*.
- Party Time* because it is cheaper than *I Do Bridal* if Rachel buys less than 40 invitations.
- It does not matter because they would cost the same amount.

6) Write an inequality to represent when it would be cheaper to use *I Do Bridal*. Let x represent the number of invitations. (A.CED.3)

- $x > 40$
- $x < 40$
- $x \geq 40$
- $x \leq 40$

$$20 + 1.5x > 40 + x$$

$$.5x > 20$$

$$x > 40$$

7) The sum of two times an integer and 64 is less than 100. What is the greatest number that integer can be? (A.CED.1)

- 0
- 18
- 20
- 17

$$2x + 64 < 100$$

$$2x < 36$$

$$x < 18$$

has to be less than 18

8) Ryan and Rhonda went on a road trip. They drove a total of 90 miles. Ryan drove the car twice as many miles as Rhonda drove the car. For how many miles did Ryan drive?

- 30 miles
- 90 miles
- 60 miles
- 120 miles

$$x + y = 90$$

$$x = 2y$$

$$y = \text{Rhonda}$$

9) The relationship in the following table is linear. Determine the equation of this line. (A.CED.2)

x	y
3	10
4	6
5	2
6	-2

$$-4 \leftarrow \text{slope}$$

- $y = -4x + 22$
  - $y = x - 4$
  - $y = 4x + 10$
  - $y = x + 7$
- wrong slope

10) It takes Darren 3 hours and 10 minutes to get home from college. Lexie's drive is one hour and 30 minutes shorter than Darren's. How many more minutes does Darren have to drive than Lexie? (N.Q.2, N.Q.3)

- a. 90 minutes
- b. 100 minutes
- c. 60 minutes
- d. 30 minutes

D = 190 min  
L = 100 min

1 hr 30 min = 90 min

Use the following scenario below to answer questions 11-12.

Kaycie has just bought a new candle. It is 20 cm tall. The box says that the candle burns 1.5 cm per hour that it is lit. (A.CED.2)

- 11) How long will it take the candle to burn all the way down?
- a. Between 10 and 11 hours
  - b. Between 15 and 16 hours
  - c. Between 13 and 14 hours
  - d. Between 7 and 8 hours

20 = 1.5x

12) Create an equation that represents the height of the candle over time. Let x be the number of hours.

- a. height = 1.5x
- b. height = 20 + 1.5x
- c. height = 20x
- d. height = 20 - 1.5x

13) Johnny mows lawns to earn some extra money during the summer. He charges \$5 per hour. Write an equation to represent the relationship between the number of hours and the total cost.

- a. y = 5
- b. y = 5x
- c. y = x + 5
- d. y = -5

14) Tonya wants to join a gym and goes to the BodyPlex down the street to do some research. She finds that they are doing a special. If she joins today, then it will only cost her a \$10 membership fee and then \$15 per month. Create an equation to represent the relationship between the number of months and the total cost.

- a. y = 15 + 10x
- b. y = 15x
- c. y = 10x
- d. y = 10 + 15x

(A.CED.1)  
15) Solve for x:  $4x - 2 = 5x + 8$

- a. x = -10
- b. x = 6
- c. x = 10
- d. x =  $\frac{2}{3}$

$$\begin{aligned} 4x - 2 &= 5x + 8 \\ -5x + 2 &= -5x + 2 \\ -1x &= 10 \\ x &= -10 \end{aligned}$$

16) Solve the following inequality for y:  $-2y + 1 < 17$

- a. y = -8
- b. y < -8
- c. y < 8
- d. y > -8

17) Solve this equation:  $7y + 1 = 29$

- a. y = 7
- b. y =  $\frac{30}{7}$
- c. y = 4
- d. y = 3

7y = 28  
y = 4

$\frac{-2y + 1}{-1 - 1} < \frac{17}{-1 - 1}$   
-2y < 16 ← flip the sign b/c of the -

18) What is the greatest integer that x can be to satisfy the following inequality?  $3x - 5 \leq 13$ . (A.CED.1)

- a. 6
- b. 5
- c. 13
- d. 3

3x ≤ 18  
x ≤ 6 → can be to

19) The formula for the area of a triangle is  $A = \frac{b \times h}{2}$ , where b is the base and h is the height. Rearrange this formula to highlight b. (A.CED.4)

- a.  $2A - h = b$
- b.  $\frac{2A}{h} = b$
- c.  $\frac{2A}{b} = h$
- d.  $\frac{A}{h} = b$

$\frac{2A}{h} = \frac{b \times h}{h}$   
 $\frac{2A}{h} = b$

20) Jackie is baffled by the formula she was told to rearrange. It is the formula for the perimeter of a rectangle:  $P = 2l + 2w$ , where l is the length and w is the width. Jackie is supposed to solve for w. Help her out by telling her the first thing she should do. (A.CED.4)

- a. She should subtract 2l from both sides.

↑  
I have no idea where the answer went!

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

Date: \_\_\_\_\_

Period: \_\_\_\_\_

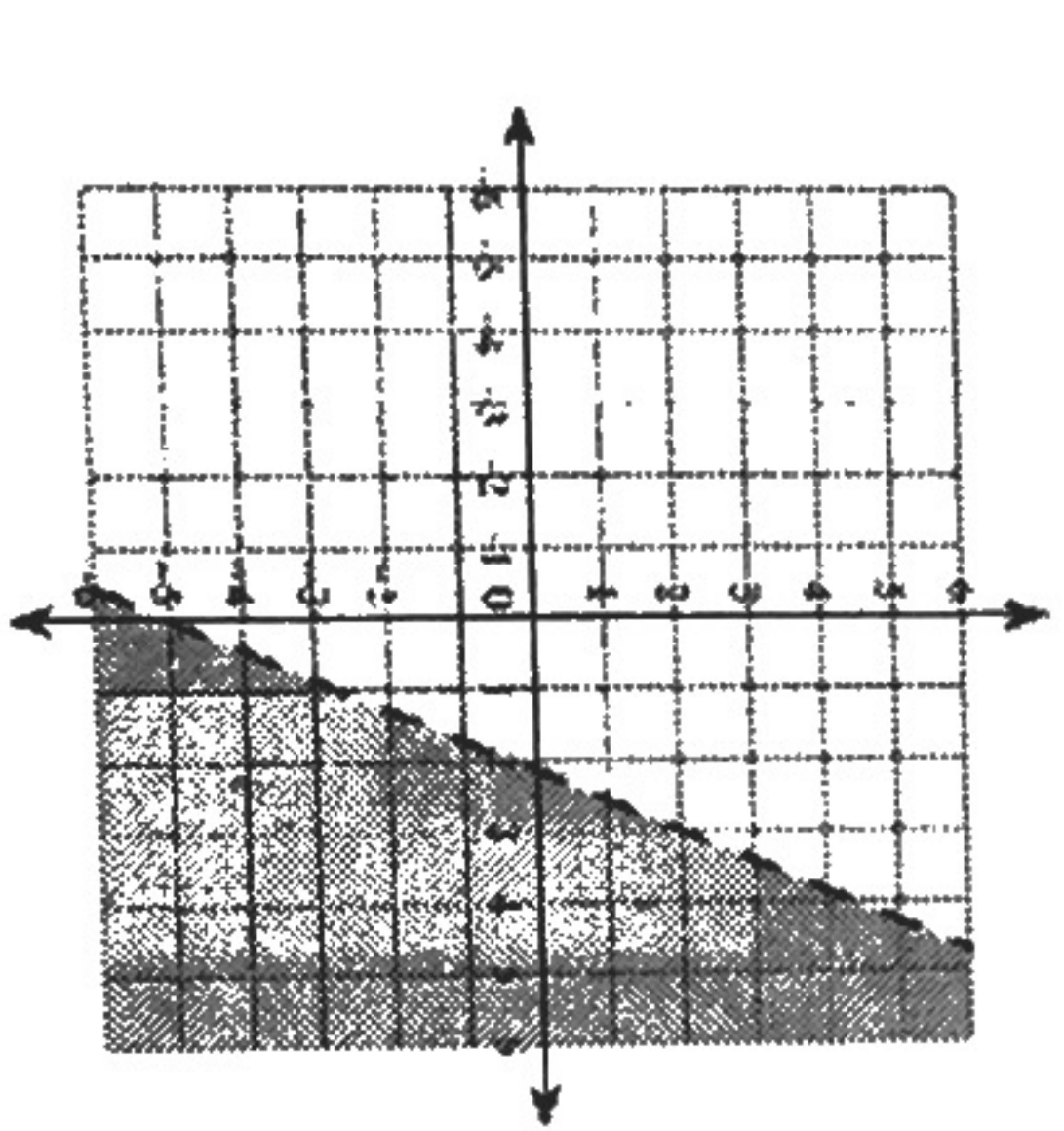
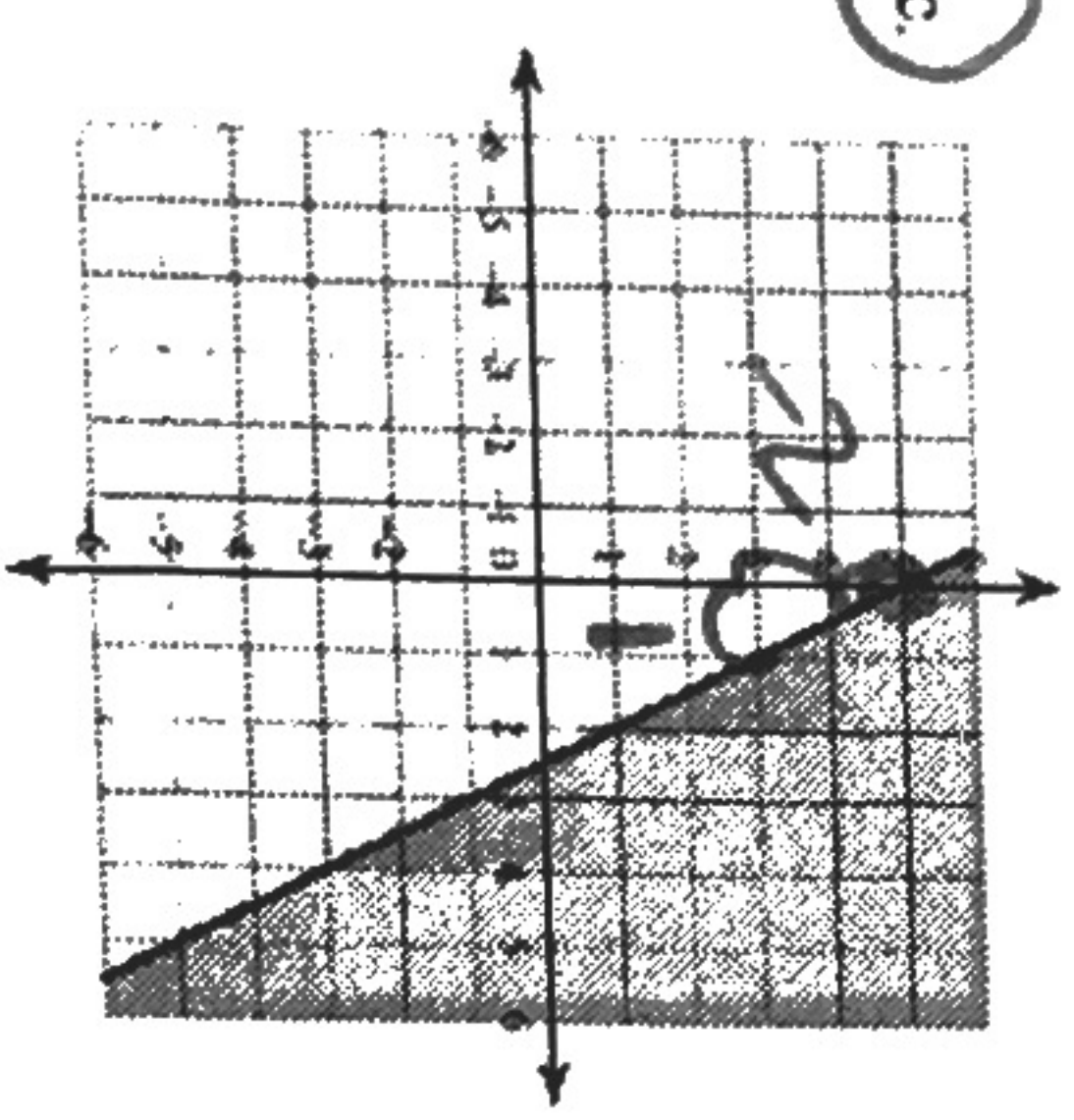
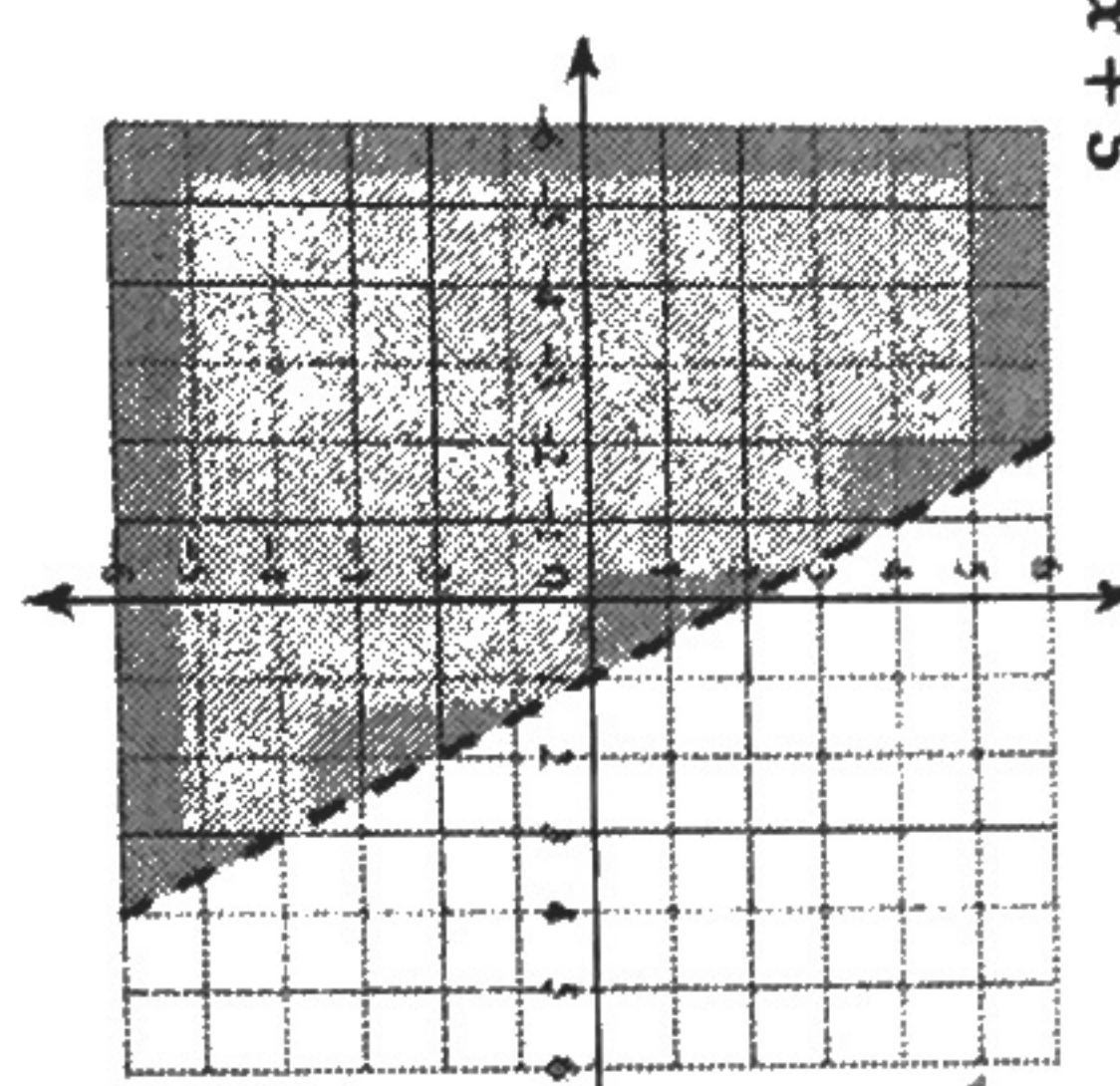
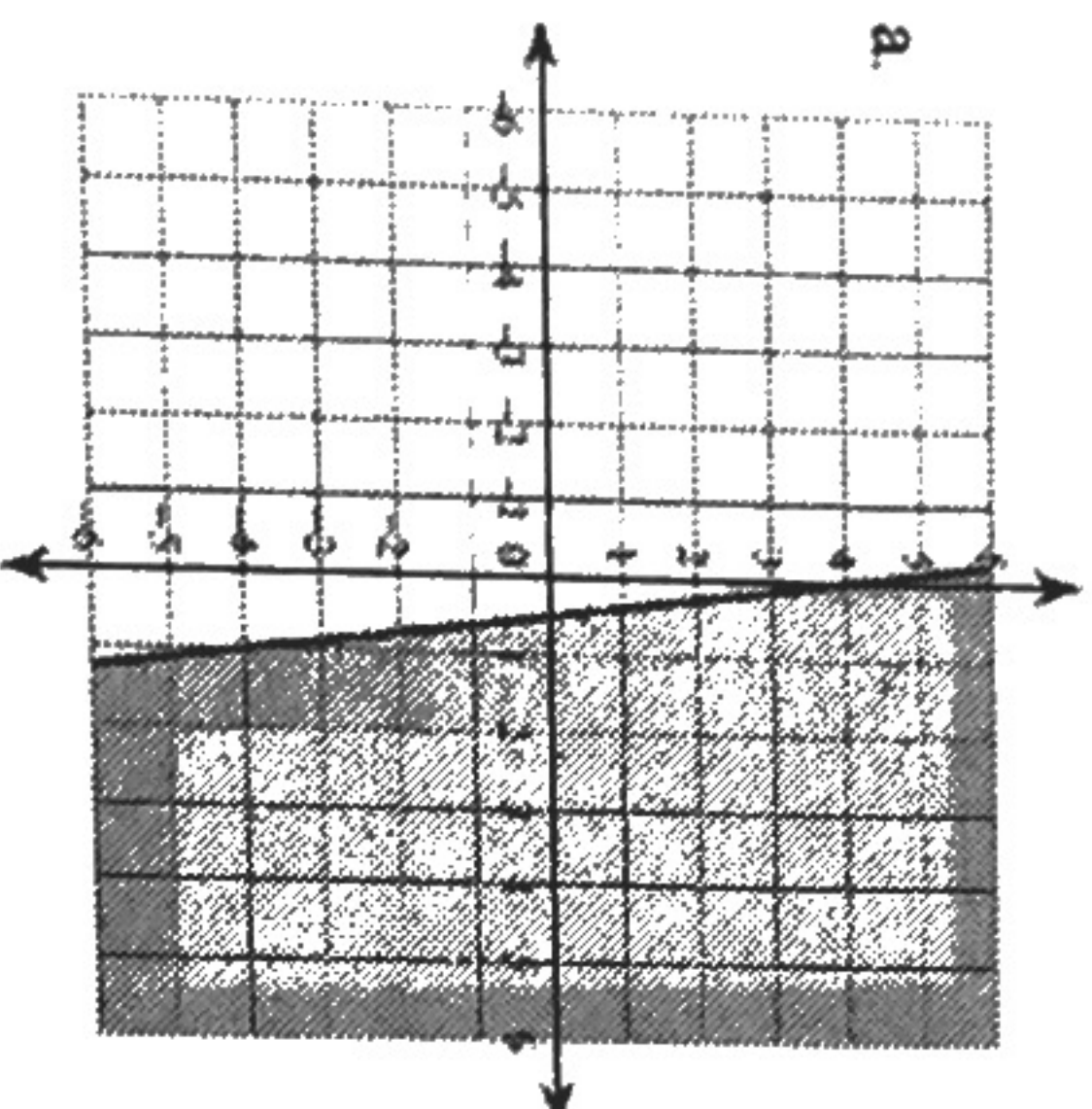
Unit 2: Reasoning with Equations and Inequalities

Multiple Choice Questions

- 1) If you were to graph the following inequality on the coordinate plane, would the line be a dashed line or a solid line? Why? (A.REI.12)  
 $y < 2x + 1$

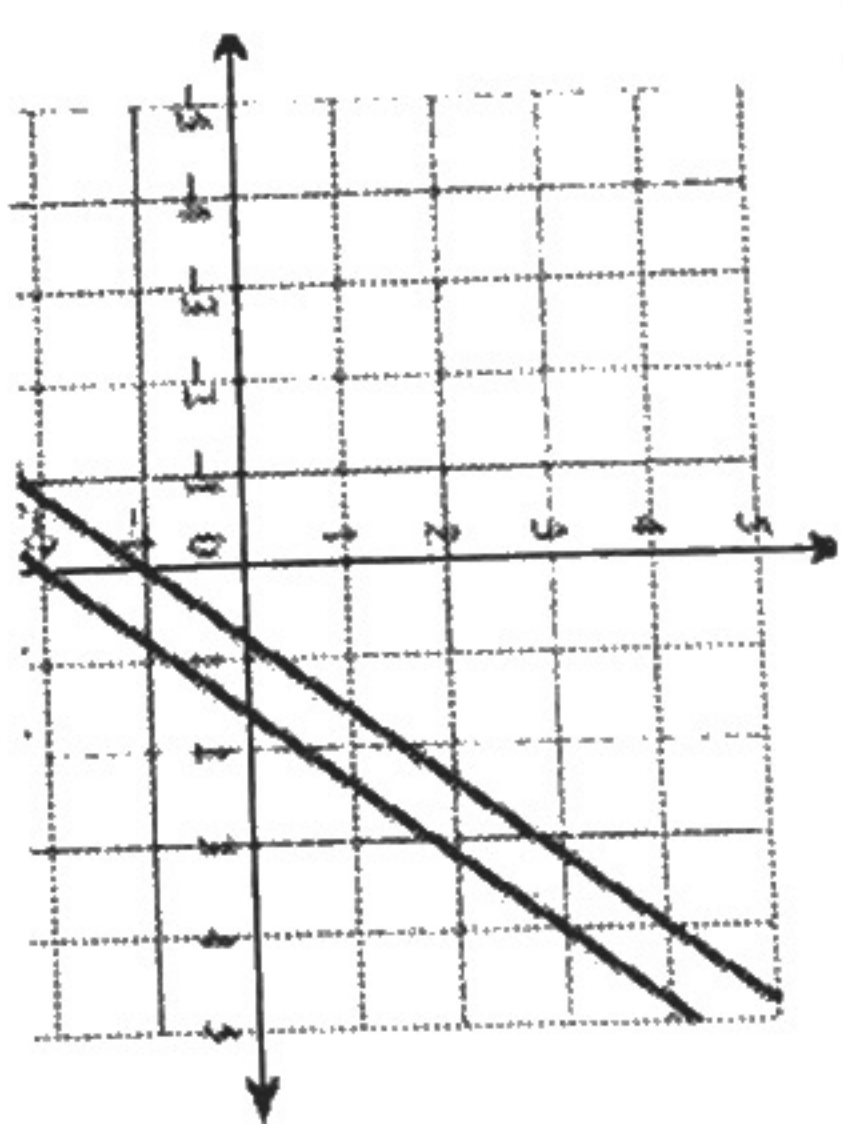
- a. A solid line because the inequality is less than.  
 b. A dashed line because you always use a dashed line.  
 c. A solid line because the inequality does NOT equal the line at any point.  
 d. A dashed line because the inequality is less than and it is NOT a part of the solution.

- 2) Which of the following graphs represents the solution to the inequality below? (A.REI.12)



$y \geq -2x + 5$   
 ✓ Solid above 5  
 ✓ Shade above 5  
 ✓ slope = -2

- 3) Solve this system of equations using the elimination method.  
 a. (10, -1)  
 b. (10, 12)  
 c. (1, 10)  
 d. (2, 19)
- 4) Below is a graph of two lines. What is the solution of these two lines? (A.REI.6)



- a. (1, 0)  
 b. (0, -1)  
 c. (4, 3)  
 d. There is NOT a solution.

Parallel

- 5) Solve this system of equations using the elimination method.  $\begin{cases} x - y = 11 \\ 2x + y = 19 \end{cases}$  (A.REI.6)
- e. (10, -1)  
 f. (10, 12)  
 g. (1, 10)  
 h. (2, 19)

diya

- 6) Solve the following system of equations by substitution.  $\begin{cases} -3x + 5 \\ 5x - 4y = -3 \end{cases}$
- a. (1, 2)  
 b. (2, 1)  
 c.  $(\frac{-23}{17}, \frac{154}{17})$   
 d.  $(\frac{23}{7}, \frac{-34}{7})$
- 7) Jasmine and her sister are saving to buy MP3 players. Jasmine has \$50 and plans to save \$10 per week. Her sister has \$80 and plans to save \$7 per week. In how many weeks will Jasmine have more money saved than her sister? (A.REI.3)
- a. 2 weeks  
 b. 4 weeks  
 c. 10 weeks  
 d. 11 weeks

$$50 + 10x > 80 + 7x$$

$$3x > 30$$

$$x > 10$$

↑ will be equal

for 150 plus 150  
 for 150 plus 150  
 for 150 plus 150  
 $\begin{cases} x - y = 11 \\ 2x + y = 19 \end{cases}$  (A.REI.6)  
 $2x - 2y = 22$   
 $2x + y = 19$   
 $3y = -3$   
 $y = -1$

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

Date: \_\_\_\_\_

### Unit 3 Multiple Choice Test Questions

**MCC9-12.F.IF.1** Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If  $f$  is a function and  $x$  is an element of its domain, then  $f(x)$  denotes the output of  $f$  corresponding to the input  $x$ . The graph of  $f$  is the graph of the equation  $y = f(x)$ . (Draw examples from linear and exponential functions.)

**Directions:** Determine if the following representations are functions. State Function or Not a Function

**1** Which of the relations below is a function?

Choose:

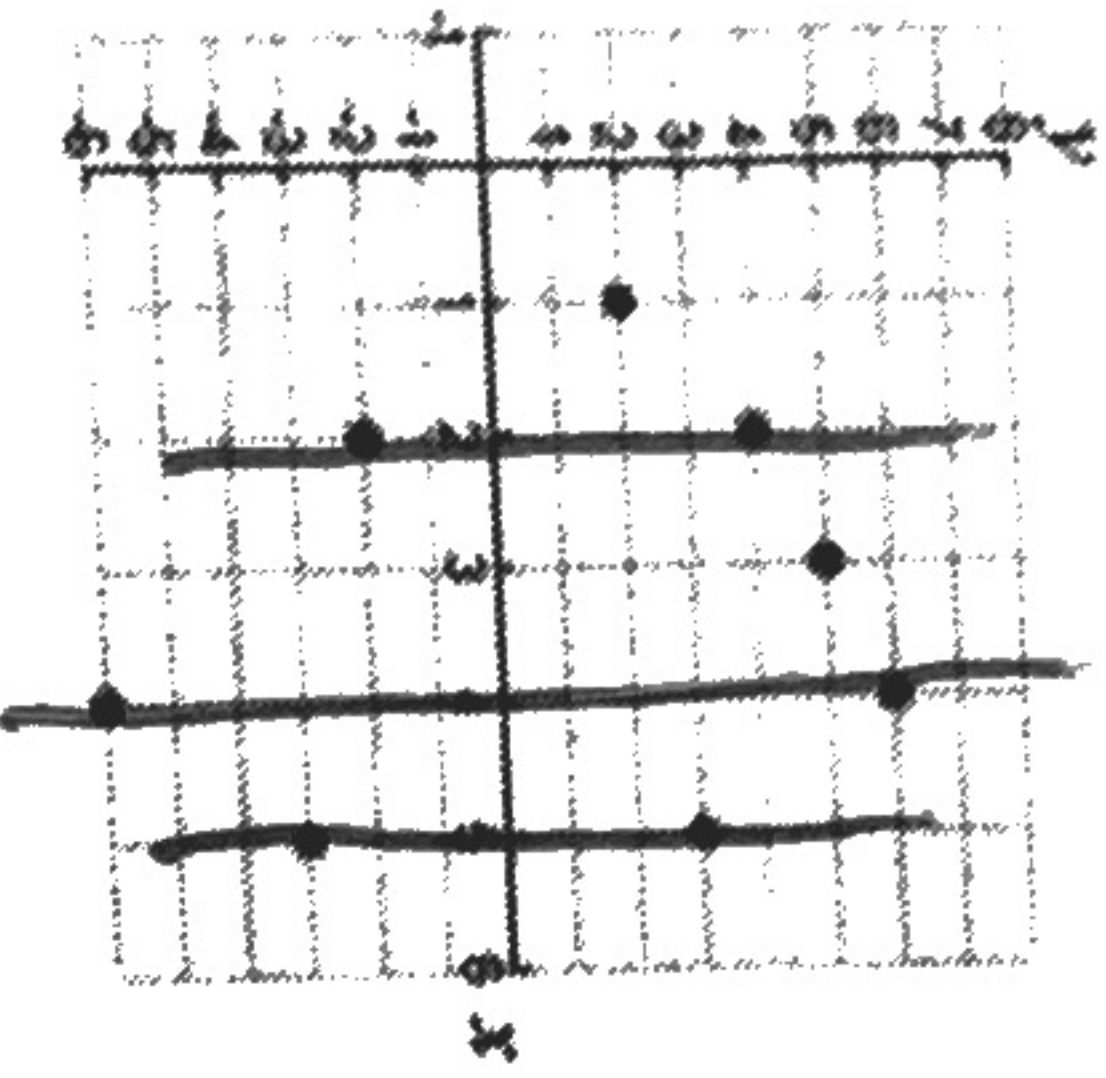
- $\{(1,1), (2,1), (3,1), (4,1), (5,1)\}$
- $\{(2,1), (2,2), (2,3), (2,4), (2,5)\}$
- $\{(0,2), (0,3), (0,4), (0,5), (0,6)\}$

*no x's repeat*

**2** The graph of a relation is shown at the right. Is this relation a function?

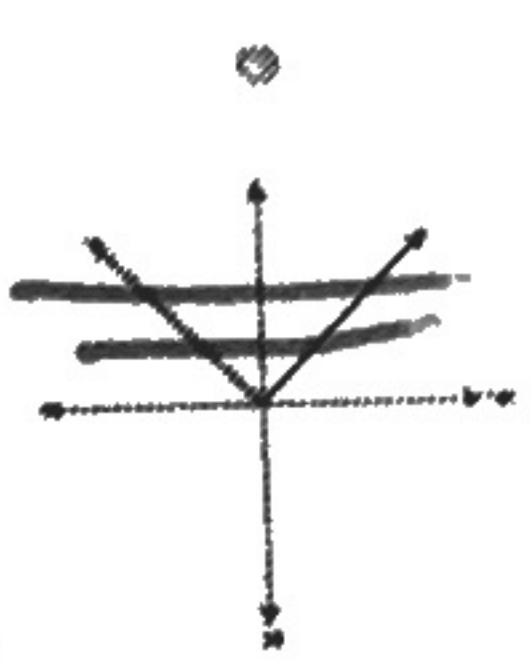
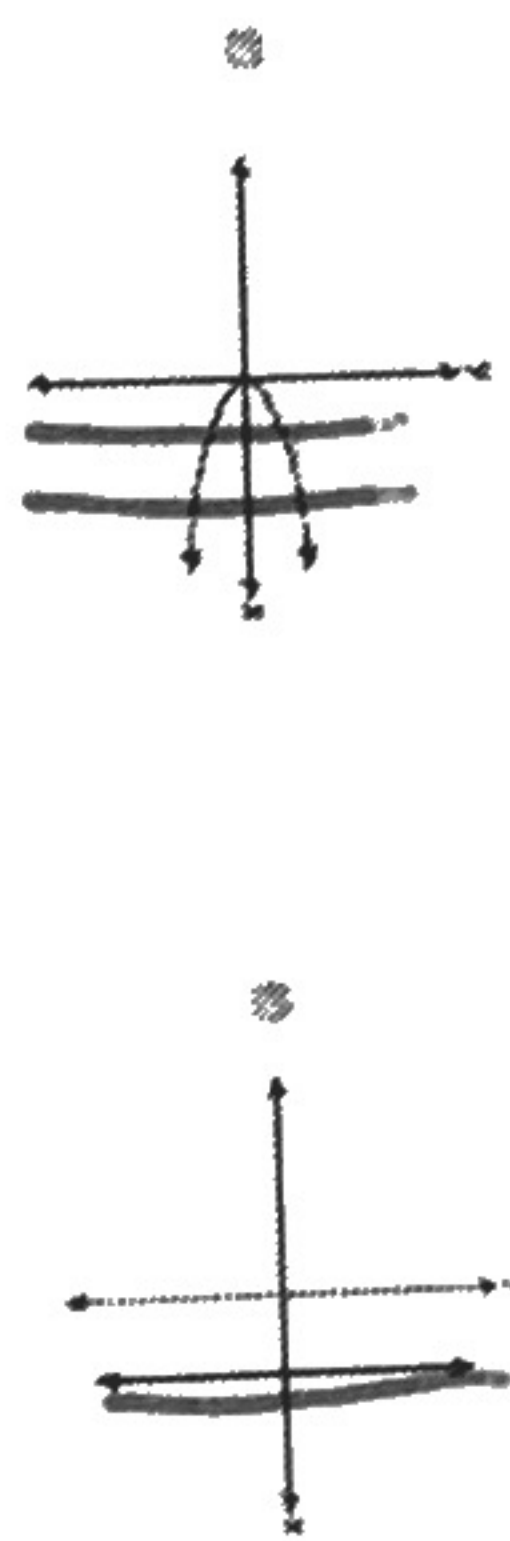
Choose:

- Yes
- No
- Cannot be determined from a graph



**4** Which graph represents a function?

Choose:



*no x-values repeat*



*Vertical test*

**3** Is the relation depicted in the chart below a function?

x	y
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10

Choose:

- Yes
- No
- Cannot be determined from a chart

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

**1.** Give the domain and range of the relation. (F.IF.5)

x	y
4	9
6	13
0	0
-5	-9

- a. D:  $\{-5, 0, 4, 6\}$ ; R:  $\{-9, 0, 9, 13\}$
- b. D:  $\{-5, 4, 6\}$ ; R:  $\{-9, 9, 13\}$
- c. D:  $\{4, 6, -5, 9, 13, -9\}$ ; R:  $\{0\}$
- d. D:  $\{-9, 0, 9, 13\}$ ; R:  $\{-5, 0, 4, 6\}$

**2.** Determine a relationship between the x- and y-values. Write an equation. (BF.1)

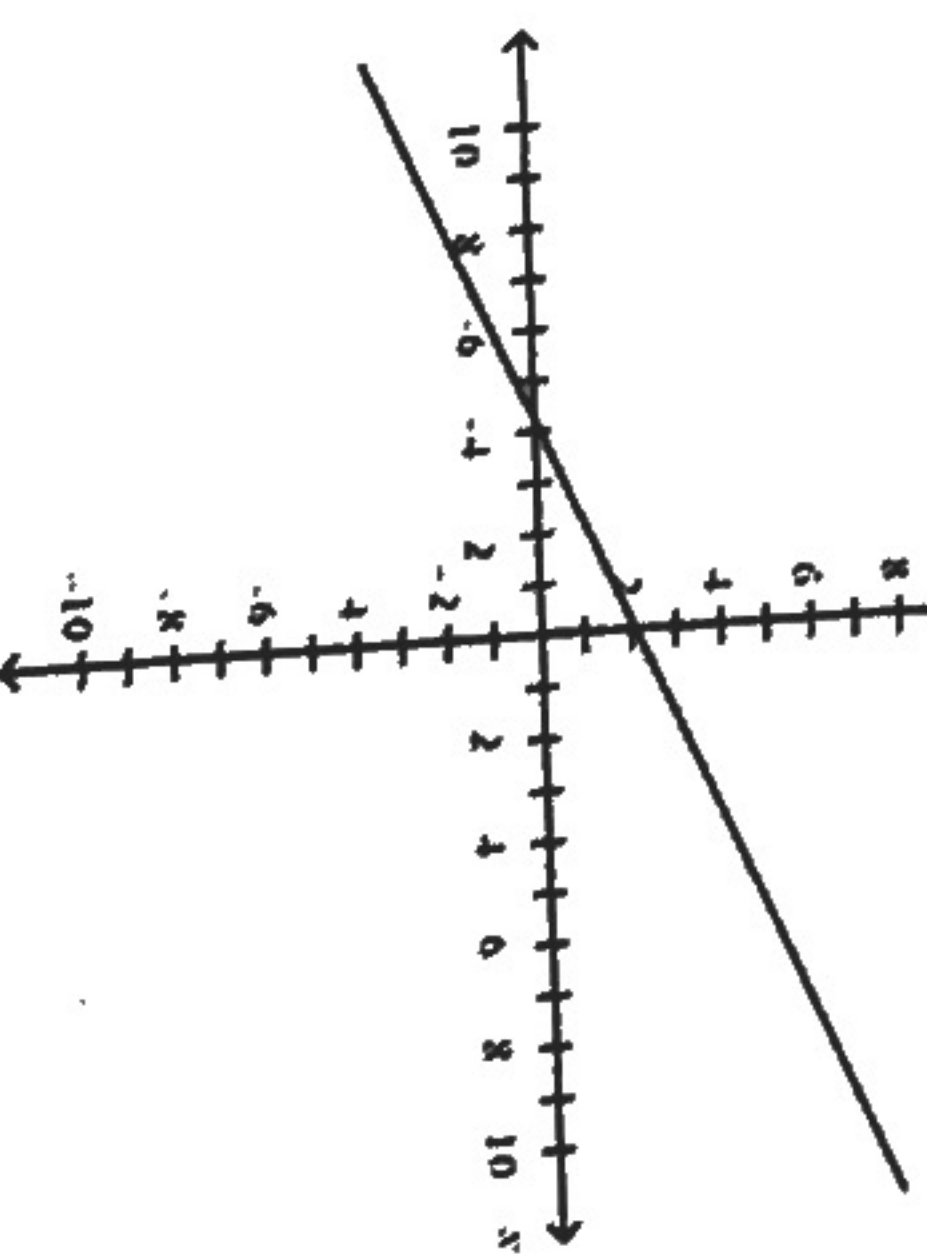
x	y
1	-4
2	-3
3	-2
4	-1

- a.  $y = x - 5$
- b.  $y = -5x + 1$
- c.  $y = x - 2$
- d.  $y = -x - 5$

**3.** For  $f(x) = -5x - 3$ , find  $f(1)$ . (F.IF.1, 2)

- a. 10
- b. 2
- c. -13
- d. -8

**4.** (F.IF.4) Find the x- and y-intercepts.

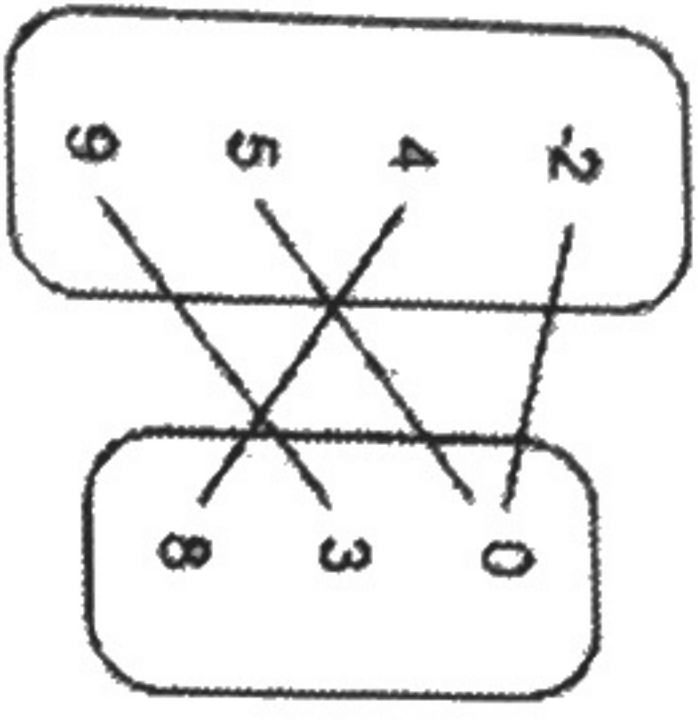


- a. x-intercept: -4, y-intercept: -2
- b. x-intercept: -4, y-intercept: 2
- c. x-intercept: 4, y-intercept: 2
- d. x-intercept: 2, y-intercept: -4

**5.** Let  $g(x)$  be the transformation, vertical translation 3 units down, of  $f(x) = -4x + 8$ . Write the rule for  $g(x)$ . (BF.3)

- a.  $g(x) = -4x + 8$
- b.  $g(x) = -4x - 3$
- c.  $g(x) = -4x + 5$
- d.  $g(x) = 3x + 8$

6. Give the domain and range of the relation.



- a. D:  $\{-2, 4, 5, 9\}$ ; R:  $\{0, 3, 8\}$   
 b. D:  $\{0, 3, 8\}$ ; R:  $\{-2, 4, 5, 9\}$   
 c. D:  $-2 < x < 9$ ; R:  $0 < x < 8$   
 d. D:  $2 < x < 9$ ; R:  $0 < x < 8$

7. Clayton has 65 stamps in her collection. To expand the collection, he is planning to buy some books of stamps that have 16 stamps each. All of the books cost the same. Clayton is not sure yet about the number of books of stamps he wants to buy, but he has enough money to buy up to 5 of them. Write a function to describe how many stamps Clayton can buy. Let  $x$  represent the number of books of stamps Clayton buys. Find a reasonable domain and range for the function.

- a.  $f(x) = 16x + 65$ ; D:  $\{0, 1, 2, 3, 4\}$ ; R:  $\{65, 81, 97, 113, 129\}$   
 b.  $f(x) = 65x + 16$ ; D:  $\{5\}$ ; R:  $\{145\}$   
 c.  $f(x) = 65x + 16$ ; D:  $\{1, 2, 3, 4\}$ ; R:  $\{81, 97, 113, 129, 145\}$   
 d.  $f(x) = 16x + 65$ ; D:  $\{0, 1, 2, 3, 4, 5\}$ ; R:  $\{65, 81, 97, 113, 129, 145\}$

8. Find the 23rd term in the arithmetic sequence 3, 11, 19, 27, 35, ...  
 $a_n = a_1 + d(n-1)$   
 $3 + 8(23-1)$   
 $3 + 8(22)$   
 $3 + 176$   
 $179$

9. Sylvie is going on vacation. She has already driven 46 miles in one hour. Her average speed for the rest of the trip is 64 miles per hour. How far will Sylvie have driven 6 hours later?  
 $46 + 6(64)$

10. Tell whether the set of ordered pairs  $\{(3, -5), (6, -11), (9, -17), (12, -23)\}$  satisfies a linear function. Explain.

a. No; there is a constant change in  $x$  that corresponds to a constant change in  $y$ .  
 $\frac{-5 - (-11)}{3 - 6} = \frac{6}{-3} = -2$

b. No; there is no constant change in  $x$  that corresponds to a constant change in  $y$ .  
 $\frac{-11 - (-17)}{12 - 9} = \frac{6}{3} = 2$

c. Yes; there is a constant change in  $x$  that corresponds to a constant change in  $y$ .  
 $\frac{-11 - (-17)}{12 - 9} = \frac{6}{3} = 2$

d. Yes; there is no constant change in  $x$  that corresponds to a constant change in  $y$ .  
 $\frac{6 - 9}{-3} = 3$

11. Find the slope of the line described by  $3x + 4y = 12$ .

- a.  $-\frac{3}{4}$   
 b.  $-\frac{3}{4}$   
 c.  $\frac{3}{4}$   
 d.  $\frac{3}{4}$

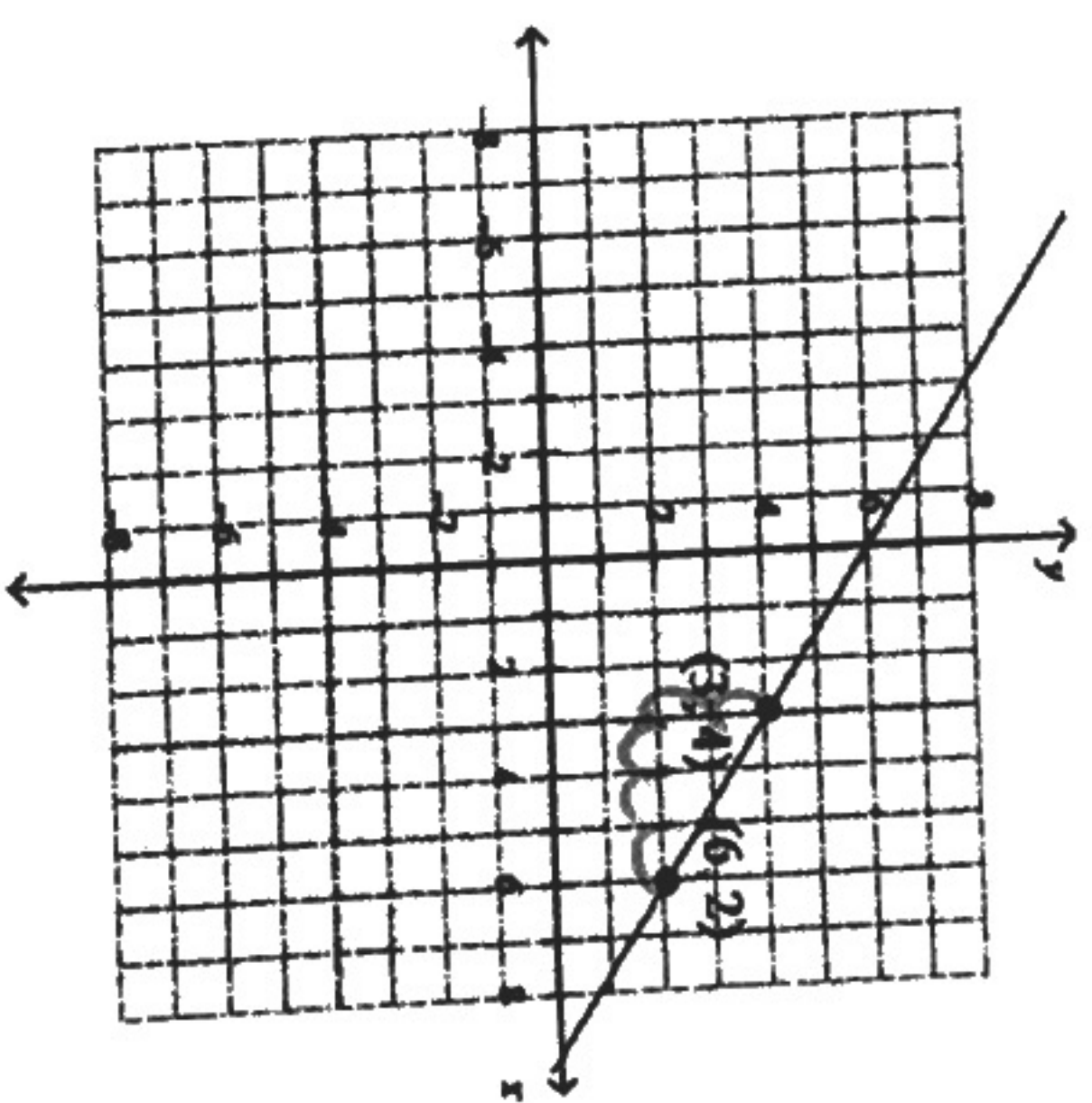
open by itself

12. Find the  $x$ - and  $y$ -intercepts of  $2x + y = 10$ .

- a.  $x$ -intercept: 5,  $y$ -intercept: -10  
 b.  $x$ -intercept: 6,  $y$ -intercept: -10  
 c.  $x$ -intercept: 5,  $y$ -intercept: -10  
 d.  $x$ -intercept: 6,  $y$ -intercept: -9

$2x + y = 10$   
 $2x = 10 - y$   
 $x = 5 - \frac{y}{2}$   
 $x = 5$  when  $y = 0$   
 $-y = 10$   
 $y = -10$

13. Find the slope of the line.



$-\frac{2}{3}$  left to right

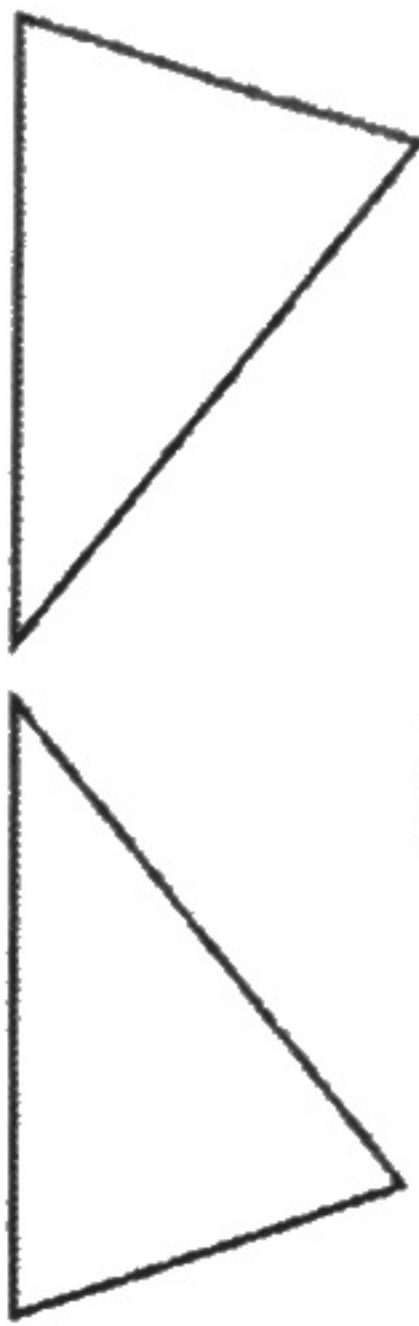
- a.  $\frac{2}{3}$   
 b.  $-\frac{2}{3}$   
 c.  $\frac{3}{2}$   
 d.  $\frac{1}{3}$

Unit 5 EOCT practice HW

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. What transformation is shown?



- A rotation
- C translation
- B reflection
- D image

J

2. Given a point in the coordinate plane, the rule  $(x, y) \rightarrow (x + 2), (y - 3)$  translates the point in which direction?

- F 2 units to the left and 3 units up
- H 3 units right and 2 units up
- G 3 units to the left and 2 units down
- J 2 units to the right and 3 units down

D

3. When the point  $(-3, 2)$  is reflected across the y-axis, what is the resulting image?

- A  $(-3, -2)$
- C  $(2, -3)$
- B  $(3, -2)$
- D  $(3, 2)$

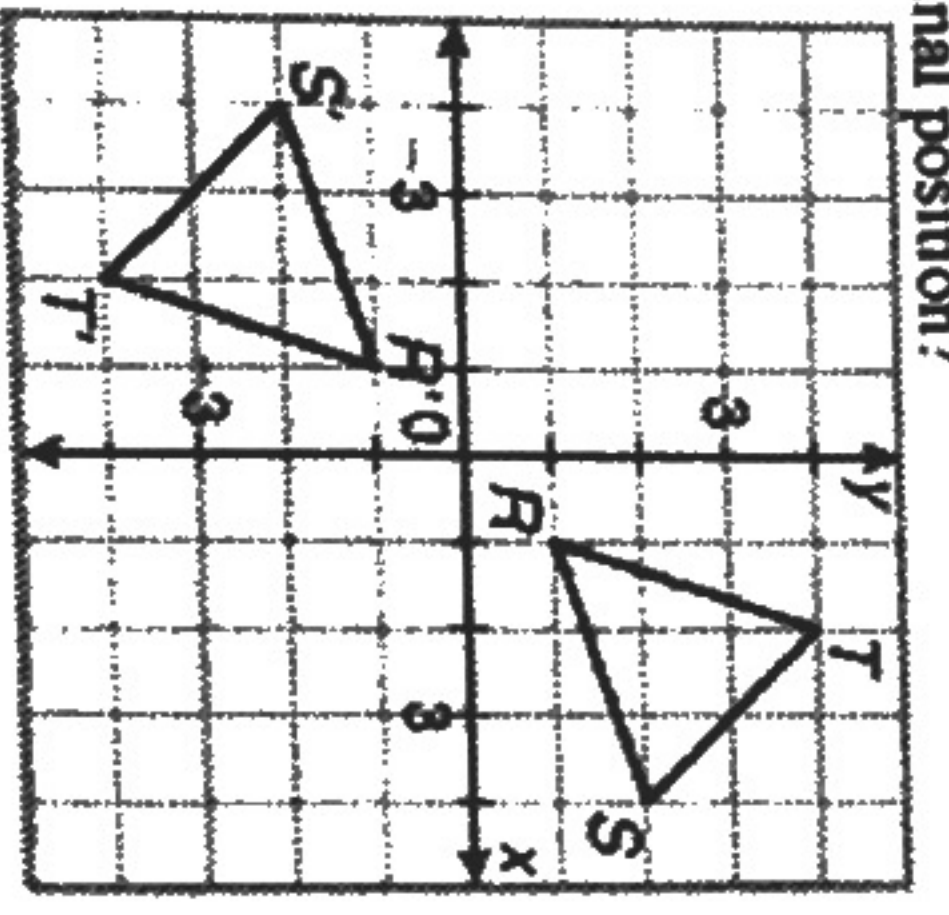
H

4. What is the image of  $(3, 6)$  when it is translated along the horizontal vector  $\langle -2, 0 \rangle$ ?

- F  $(3, -4)$
- H  $(1, 6)$
- G  $(1, 4)$
- J  $(5, 6)$

B

5.  $\triangle RST$  is reflected across the y-axis, and then its image is reflected across the x-axis. Which single transformation moves the triangle from its starting position to its final position?



- A a rotation of  $90^\circ$  about the origin
- B a rotation of  $180^\circ$  about the origin

J

6. The endpoints of  $\overline{MN}$  are  $M(2, 5)$  and  $N(8, -1)$ . Which shows the endpoints of the segment after it is translated along the vector  $\langle -2, 3 \rangle$ ?

- F  $M'(-4, -10), N'(24, -3)$
- H  $M'(0, 3), N'(11, 2)$
- G  $M'(-4, 15), N'(-16, -3)$
- J  $M'(0, 8), N'(6, 2)$

$$\begin{matrix} (2, 5) & (8, -1) \\ -2, 3 & -2, 3 \\ \hline 0, 8 & 6, 2 \end{matrix}$$

Write True or False. The transformation is a translation.

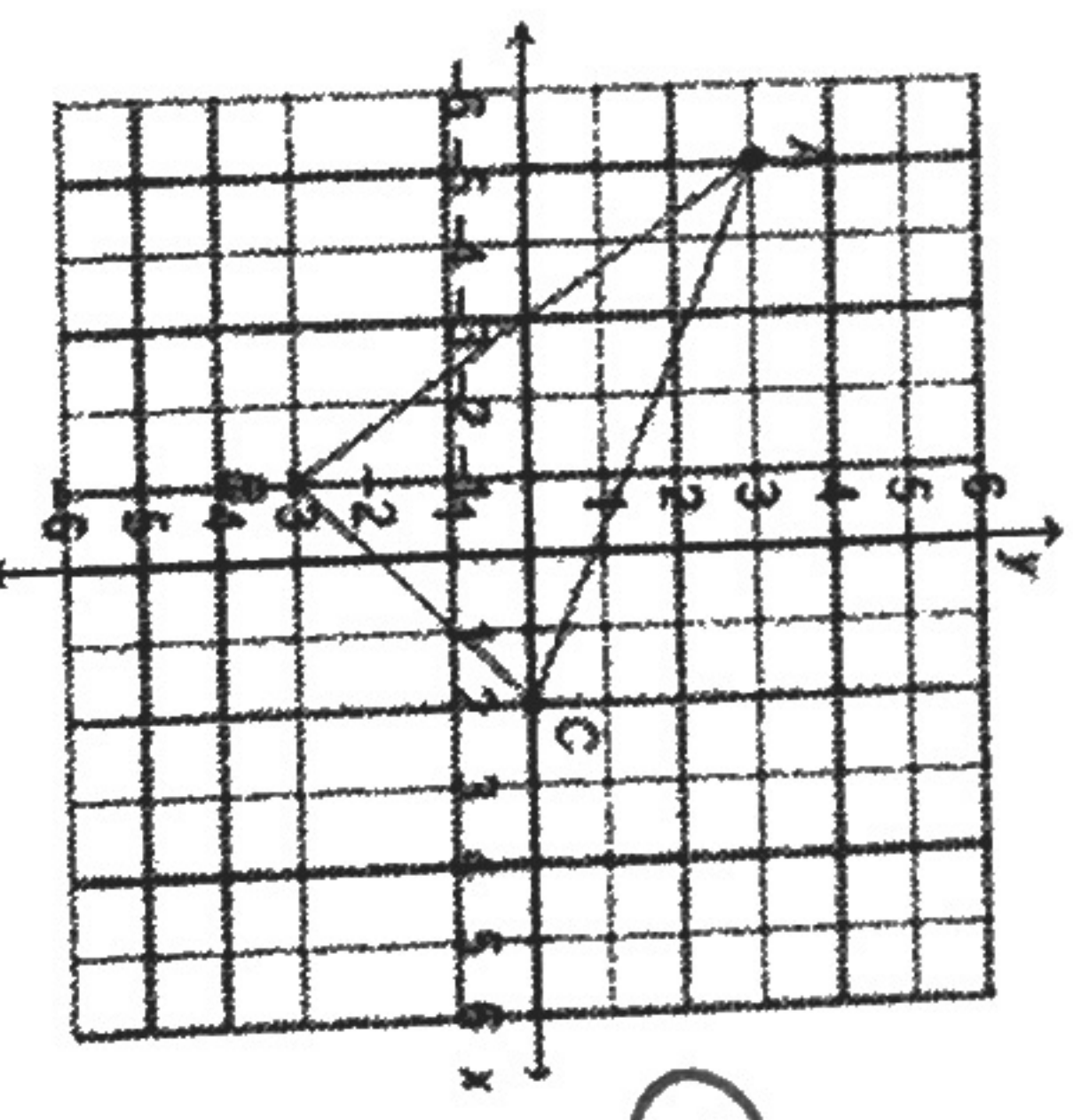


True

1. Point H has coordinates  $(-7, 2)$ . What are its coordinates after it is rotated  $180^\circ$  about the origin?

- A.  $(2, -7)$
- B.  $(-2, 7)$
- C.  $(7, 2)$
- D.  $(7, -2)$

2) What are the vertices of Triangle  $A'B'C'$  after Triangle  $ABC$  is reflected across the y-axis?



- A.  $A'(3, -5)$   $B'(-3, -1)$   $C'(0, 2)$
- B.  $A'(5, 3)$   $B'(-3, 1)$   $C'(2, 0)$
- C.  $A'(5, 3)$   $B'(1, -3)$   $C'(-2, 0)$
- D.  $A'(-5, -3)$   $B'(-1, 3)$   $C'(2, 0)$

$$\begin{matrix} (3, 5) & (5, 3) & (2, 0) \\ - & - & - \\ (-3, -5) & (-1, -3) & (-2, 0) \end{matrix}$$

3. Point  $A(-3, 5)$  is reflected over the y-axis. It's image,  $A'$ , is then reflected over the x-axis. What are the coordinates of the second image point  $A''$ ?

- A.  $A''(3, -5)$
- B.  $A''(-3, 5)$
- C.  $A''(3, 5)$

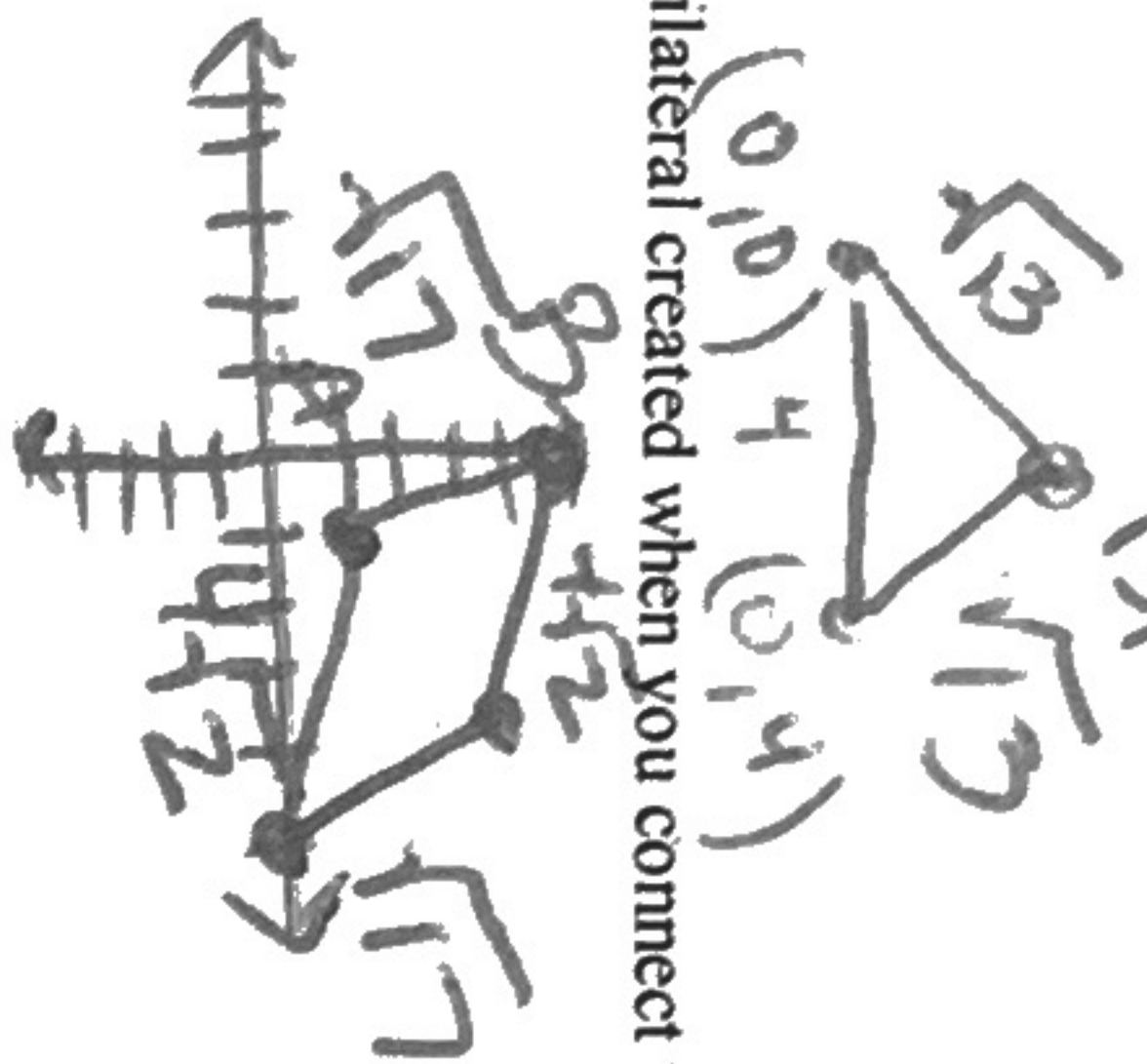
$$\begin{matrix} -3, 5 & \text{orig} \\ 3, 5 & Y \\ 3, -5 & X \end{matrix}$$

MCC9-12.G.GPE.4 Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point  $(1, \sqrt{3})$  lies on the circle centered at the origin and containing the point  $(0, 2)$ .

1. Triangle  $ABC$  has vertices  $A(0, 0)$ ,  $B(3, 2)$ , and  $C(0, 4)$ . The triangle may be classified as
- a) equilateral
  - b) isosceles
  - c) right
  - d) scalene

2. What is the most specific name of the quadrilateral created when you connect the following points?  $A(1, 1)$ ,  $B(0, 5)$ ,  $C(4, 4)$ , and  $D(5, 0)$ .

- a.) Rectangle
- b.) Rhombus
- c.) Parallelogram
- d.) Square



3. The point  $(-4, -2)$  lies on a circle. What is the length of the radius of this circle if the center is located at  $(-8, -10)$ ?

- [1]  $\sqrt{48}$
- [2]  $\sqrt{80}$
- [3]  $\sqrt{108}$
- [4]  $\sqrt{288}$

4. When proving that a quadrilateral is a parallelogram by using slopes, you must find:

- [1] the slopes of all four sides
- [2] the slopes of two opposite sides.
- [3] the lengths of all four sides.
- [4] both the lengths and slopes of all four sides.

5. When proving that a triangle is a right triangle using coordinate geometry methods, you must:

- [1] show that the slopes of two of the sides are negative reciprocals creating perpendicular lines and right angles.
- [2] show that the lengths of the sides satisfy the Pythagorean Theorem, thus creating a right angle.
- [3] both choices 1 and 2 may be used.
- [4] neither choice 1 nor 2 may be used.

**BEST answer**

MCC9-12.G.GPE.5 Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).

1. A line passes through point A at  $(2, 3)$  and point B at  $(4, 7)$ . Which is the equation of  $\overline{BC}$  if  $\overline{AB} \perp \overline{BC}$ ?

- A.  $y = -2x + 5$
- B.  $y = -\frac{1}{2}x + 5$
- C.  $y = -\frac{1}{2}x + 9$
- D.  $y = \frac{1}{2}x + 5$

$\frac{4}{2} = 2$

2. Which line is parallel to the line described by  $2x + 3y = 6$ ?

- A.  $3x + 2y = 6$
- B.  $3x - 2y = -6$
- C.  $2x + 3y = -6$
- D.  $2x - 3y = 6$

3. Here are four linear equations. Which pair of lines are parallel?

- I  $4x + 3y = 15$
- II  $3x - 4y = -8$
- III  $y + 1 = \frac{4}{3}(x - 6)$
- IV  $y = \frac{3}{4}x - 5$

- A. I and II
- B. I and III
- C. II and IV
- D. III and IV

4. Which equation describes a line that passes through  $(-6, 8)$  and is perpendicular to the line described by  $y = 2x - 4$ ?

- A.  $y = -2x - 4$
- B.  $y = -\frac{1}{2}x + 5$
- C.  $y = \frac{1}{2}x + 11$
- D.  $y = 2x + 20$

5. Here are four linear equations.

- I  $3x + 2y = 10$
- II  $-9x - 6y = -8$
- III  $y + 1 = \frac{3}{2}(x - 6)$
- IV  $-5y = 7.5x$

Which line is NOT parallel to the rest?

- A. I
- B. II
- C. III
- D. IV

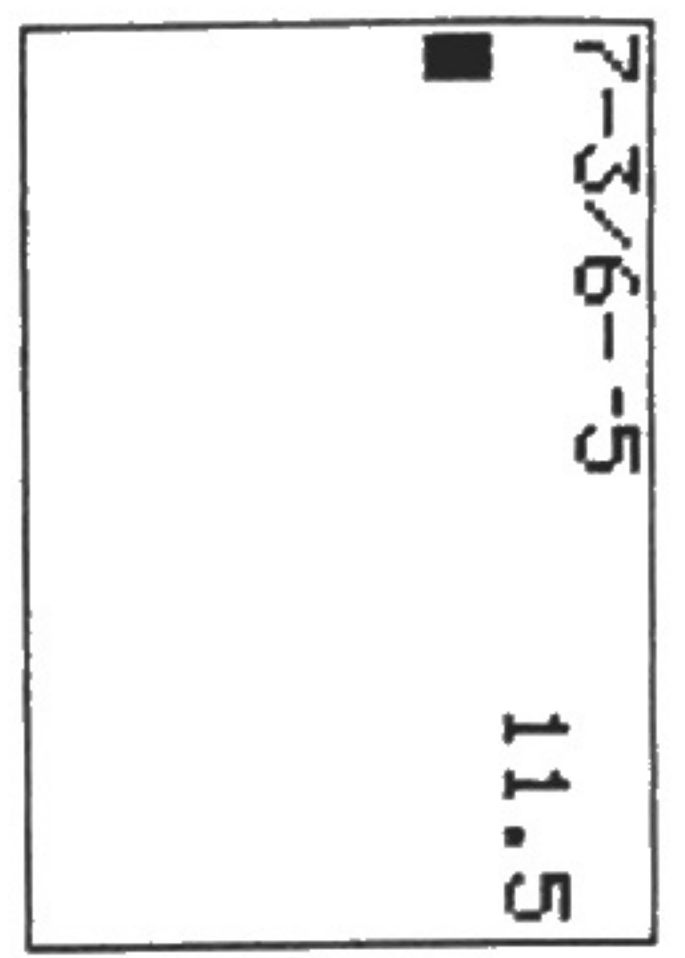
$-\frac{9}{6} = -\frac{3}{2}$

Unit 6 Multiple Choice Questions

6. Which equation describes a line that passes through  $(-6, 8)$  and is perpendicular to the line described by  $4x - 2y = 6$ ?
- A  $y = -\frac{1}{2}x + 5$       C  $y = 2x - 3$   
 B  $y = -\frac{1}{2}x - 3$       D  $y = 2x - 20$

$8 = -\frac{1}{2}(-6) + b$   
 $8 = 3 + b$   
 $5 = b$   
 $4x - 2y = 6$   
 $-2y = -4x + 6$   
 $y = 2x - 3$

7. A student enters the following information into his/her calculator when attempting to find the slope between the points  $(6, 7)$  and  $(-5, 3)$ . Which of the following statements is TRUE?
- [1] The student is correct, the slope is 11.5.
  - [2] The slope formula does not involve subtraction.
  - [3] The slope is actually  $-11.5$ .
  - [4] The slope is actually  $4/11$ .



MCC9-12.G.GPE.6 Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

1. What is the distance between  $(7, -3)$  and  $(-5, 6)$ ?
- a. 4    b. 9    c. 21     d. 15

2. What are the coordinates of the midpoints of  $\overline{BL}$  with endpoints  $B(-7, -4)$  and  $L(2, 3)$ ?

- A.  $(-3\frac{1}{2}, -1\frac{1}{2})$   
 B.  $(-2\frac{1}{2}, -\frac{1}{2})$   
 C.  $(-1\frac{1}{2}, 0)$   
 D.  $(-5, -1)$

3. Find the coordinates of P such that P divided the line segment from  $A(1, 3)$  to  $B(8, 4)$  into a 4 to 1 ratio.
- a.  $P(-4, 6, 2, 2)$       c)  $P(7, 1)$   
 b)  $P(6, 6, 3, 8)$       d)  $P(1, 8, 8, 6)$

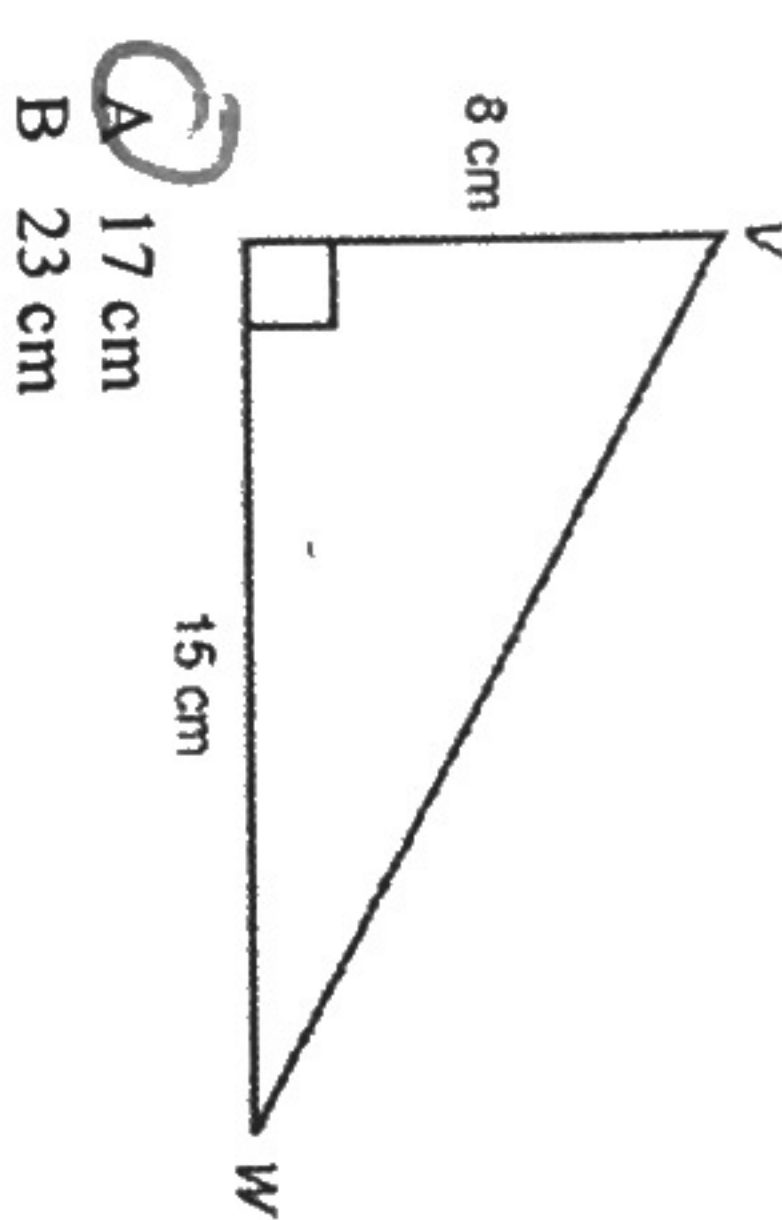
4. Find the coordinates for the midpoint of  $\overline{MN}$  with endpoints  $M(-3, 8)$  and  $N(-7, 6)$ .
- A.  $(-5, 7)$       C.  $(2, 1)$   
 B.  $(5, -7)$       D.  $(-2, -1)$

Unit 6 Multiple Choice Questions

5. K is the midpoint of  $\overline{PQ}$ . P has coordinates  $(-9, -4)$  and K has coordinates  $(-1, 6)$ . What are the coordinates of Q?
- A.  $(-5, 1)$        C.  $(-11, 8)$   
 B.  $(5, 10)$        D.  $(7, 16)$

6. M is the midpoint of  $\overline{RS}$ . R has coordinates  $(-12, 4)$ , and M has coordinates  $(1, -2)$ . What are the coordinates of S?
- A.  $(-5, -1)$        C.  $(13, 6)$   
 B.  $(-11, 2)$        D.  $(14, -8)$

7. What is the distance from V to W?



- A. 17 cm      C. 120 cm  
 B. 23 cm      D. 289 cm

8. What is the distance from  $M(-1, 6)$  to  $N(11, 1)$ ?
- A. 12 units       C. 13 units  
 B.  $\sqrt{149}$  units      D. 169 units

MCC9-12.G.GPE.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.

1. What is the perimeter of the polygon formed by the points  $P(-4, 1)$ ,  $Q(2, 4)$ ,  $R(4, 0)$ ,  $S(-2, -3)$ ?
- A.  $10\sqrt{5}$  units  
 B. 18 units  
 C.  $9\sqrt{5}$  units  
 D. 20 units

$3\sqrt{5} + 2\sqrt{5} + 3\sqrt{5} + 2\sqrt{5}$

2. The area of a rectangular office is 288 square feet. One side of the office is 18 feet long. What is the perimeter of the office?
- A. 34 ft      C. 72 ft  
 B. 68 ft      D. 88 ft

$A = lw$   
 $288 = 18w$

$16 = w$

