

# Intensive Math-Algebra I EOC Review



***Linear Functions I***

*Student Packet*



*Summer 2013*

Day 20



## Linear Functions Review Day 1

MA.912.A.2.3

1. Rita wants to choose the relation that represents a function. Which relation should she choose?

- A.  $\{(-4, 4) (-2, 2) (0, 0) (2, -2) (4, -4)\}$
- B.  $\{(-3, 0) (-2, 1) (-1, 2) (-1, -2) (-2, -1)\}$
- C.  $\{(0, 0) (1, 0) (1, 1) (2, 1) (2, 2)\}$
- D.  $\{(1, 4) (-3, 0) (1, -4) (5, 0) (-3, 4)\}$

MA.912.A.3.1

2. What is the value of  $x$  in the equation below?

$$4x - 8 = 6x + 16$$

- A.  $x = -12$
- B.  $x = -2$
- C.  $x = 10$
- D.  $x = 24$

MA.912.A.5.4

3. Solve the following proportion for  $x$ :

$$\frac{x - 6}{5} = \frac{3x - 10}{25}$$

- A.  $-2$
- B.  $-\frac{2}{5}$
- C.  $5$
- D.  $10$

MA.912.A.3.1

4. Solve the following equation for  $y$ :

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

- A.  $y = -\frac{79}{15}$
- B.  $y = -\frac{366}{75}$
- C.  $y = -\frac{11}{5}$
- D.  $y = -\frac{18}{61}$

MA.912.A.3.5

5. While doing her homework, Sharon wrote the following expression:

$$2(x + 4)$$

Which of these situations could Sharon be representing?

- A. Tom's bedroom has a length of 4 units and a width of  $x$  units. What is the area of his bedroom?
- B. Tom bought 2 sodas and 2 bags of chips. A bag of chips costs 4 times as much as a soda. How much did Tom spend altogether?
- C. Tom has  $x$  dimes. He gets 4 more dimes, then exchanges the dimes for nickels. How many nickels does Tom have?
- D. Tom worked on a report for 2 days. He worked 4 hours the first day and  $x$  hours the second day. How much time did Tom spend on the report?

MA.912.A.2.4

6. This set of ordered pairs defines a relation.

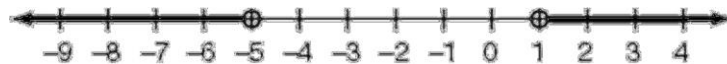
$$\{(1, 8), (2, 8), (3, 9), (4, 9), (5, 10)\}$$

What is the range of this relation?

- A.  $\{8, 9, 10\}$
- B.  $\{1, 2, 3, 4, 5\}$
- C.  $\{1, 2, 3, 8, 9, 10\}$
- D.  $\{1, 2, 3, 4, 5, 8, 9, 10\}$

MA.912.A.3.4

7. George created the following graph to show the solution to a compound inequality.



Which compound inequality has George's given solution?

- A.  $2x + 4 < 6$
- B.  $5x < 5$
- C.  $2x + 4 > 6$  or  $2x + 4 < -6$
- D.  $5x + 2 > -23$  or  $5x - 2 < -23$

MA.912.A.3.5

8. The senior class at Eastside High School is getting class T-shirts printed. The silkscreening company that makes the shirts charges \$8.25 per shirt and a one-time fee of \$38 to make the silkscreen. If the senior class has budgeted \$4,500.00 for the T-shirts, what is the greatest number of shirts they can order?
- A. 540
  - B. 545
  - C. 550
  - D. 555

MA.912.A.5.4

9. Solve the following proportion for x:

$$\frac{x - 6}{5} = \frac{3x - 10}{25}$$

- A. -6.3
- B. -3
- C. -1.6
- D. 3

MA.912.A.3.3

10. In physics, the current (I), potential difference (V), and resistance (R) of an electrical circuit are known to stand in the following relation.

$$I = \frac{V}{R}$$

Which of the following is the same equation solved for V?

- A.  $V = \frac{R}{I}$
- B.  $V = \frac{I}{R}$
- C.  $V = IR$
- D.  $V = I(1 - R)$

MA.912.A.2.3

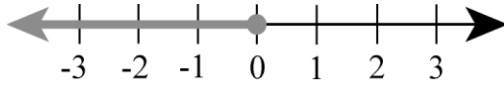
11. The Foxton car factory and the Greensburg car factory both produce the Delta car. The Foxton car factory produces 1 finished Delta every 3 minutes. The Greensburg car factory produces 1 finished Delta every 5 minutes. How many hours will it take both factories to produce a total of 1,080 finished Delta cars?
- A. 2.25 hours
  - B. 9.6 hours
  - C. 33.75 hours
  - D. 144.0 hours

MA.912.A.3.4

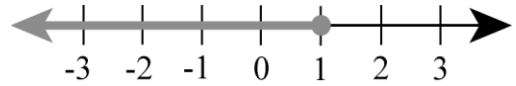
12. Which graph represents the solution to the following inequality?

$$10x - 3 \geq -3$$

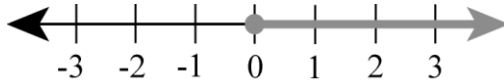
A.



B.



C.



D.



MA.912.A.2.3

13. As the manager of a coffee house, Paul created this table to help his cashiers determine the total cost of multiple cups of coffee.

Number of Cups Sold	Cost
1	\$1.90
2	\$3.80
5	\$9.50
7	\$13.30
8	\$15.20

Which function represents the cost of  $x$  cups of coffee?

- A.  $f(x) = \frac{\$1.90}{x}$
- B.  $f(x) = \$1.90x$
- C.  $f(x) = x - \$1.90$
- D.  $f(x) = \$1.90 + x$

MA.912.A.3.4

14. What values of  $p$  satisfy this inequality?

$$-3p > -7p + 12$$

- A.  $p < -1.2$
- B.  $p > -1.2$
- C.  $p < 1.2$
- D.  $p > 3$

MA.912.3.5

15. Elena and Matthew are president and vice-president of their ninth-grade class at Riverside High School. They have suggested that the school sponsor a dance to raise money for the victims of a recent hurricane. The expenses for the dance will be \$250 for the DJ and \$100 for the refreshments. Tickets will cost \$5 a person. How many tickets must be sold in order to raise \$1,000 after expenses?

- A. 250
- B. 270
- C. 350
- D. 420

MA.912.A.3.3

16. The mean ( $m$ ) of two numbers ( $a$  and  $b$ ) can be found using the equation below.

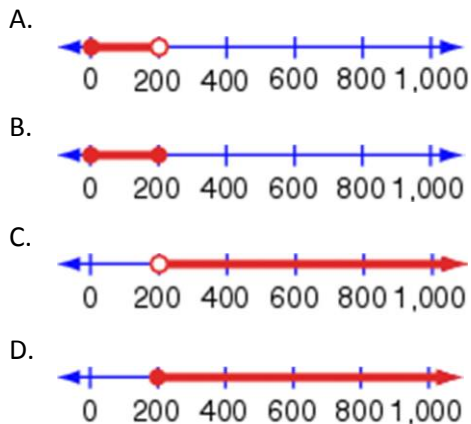
$$m = \frac{1}{2}(a + b)$$

Which of the following is the same equation solved for  $a$ ?

- A.  $a = 2(m + b)$
- B.  $a = \frac{m-b}{2}$
- C.  $a = 2m - b$
- D.  $a = m - \frac{b}{2}$

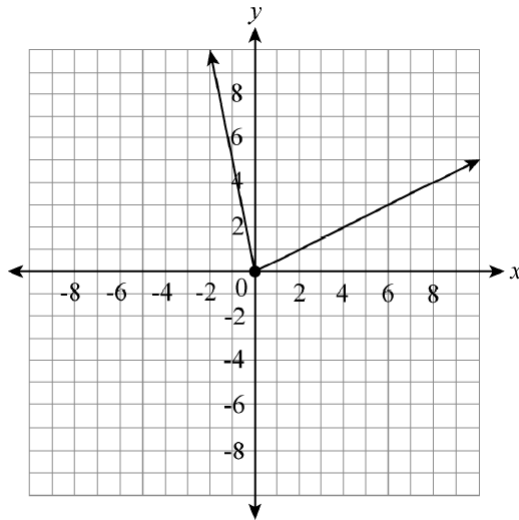
MA.912.A.3.4

17. Edith budgets a maximum of \$50 per month for her cell phone bill. Her cell phone provider charges \$30 a month as a base fee plus \$0.10 per minute for usage of the cell phone. Which number line shows how many minutes Edith can use each month and stay within her budget?



MA.912.A.2.4

18. The graph of a function is shown below. Each hash mark represents 1 unit.



Which of the following best describes the domain and range of the function in the graph?

- A. Domain:  $\{0 \leq x \leq 7\}$   
Range:  $\{-2 \leq y \leq 10\}$
- B. Domain:  $\{\text{all real numbers}\}$   
Range:  $\{0 \leq y \leq 7\}$
- C. Domain:  $\{\text{all real numbers}\}$   
Range:  $\{0 \leq y \leq \infty\}$
- D. Domain:  $\{0 \leq x \leq \infty\}$   
Range:  $\{0 \leq y \leq \infty\}$

MA.912.3.5

19. George began making paper flowers for the tables at the school awards banquet. He can make 3 flowers per minute. Sue joined him 5 minutes after he started. She can make 4 flowers per minute. George continued to make 3 flowers per minute. Together, they made 190 flowers. Which statement about the number of flowers made is true?

- A. Sue made 160 flowers.
- B. George made 30 flowers.
- C. Sue made 25 flowers.
- D. George made 90 flowers.



MA.912.A.2.3

20. The function  $f(x) = \$13x + \$5.95$  represents Ben's total cost of DVDs per order, where \$5.95 is the shipping and handling charge and  $x$  is the number of DVDs purchased. If the price of each DVD increases by \$1.50, which function can Ben use to find his new total cost?

- A.  $f(x) = \$13x + \$7.45$
- B.  $f(x) = \$13x + \$5.95 + \$1.50$
- C.  $f(x) = \$14.50x + \$7.45$
- D.  $f(x) = \$14.50x + \$5.95$

MA.912.A.3.5

21. Pete earns \$9.50 per hour. He earns \$14.25 per hour for overtime. He works  $t$  hours in one week. He makes  $c$  dollars for the whole week. Which represents the independent variable in this situation?

- A.  $c$ , the total dollars
- B.  $t$ , the number of hours
- C. \$9.50, the rate per hour
- D. 14.25, the rate per hour for overtime

MA.912.A.2.3

22. It costs 10¢ per copy to use the library's copier. The total cost ( $c$ ) is a function of the number of copies made ( $n$ ). Which of these represents this situation in function notation?

- A.  $c(n) = 0.10 + n$
- B.  $n(c) = 0.10 + c$
- C.  $c(n) = 0.10n$
- D.  $n(c) = 0.10c$

MA.912.A.3.5

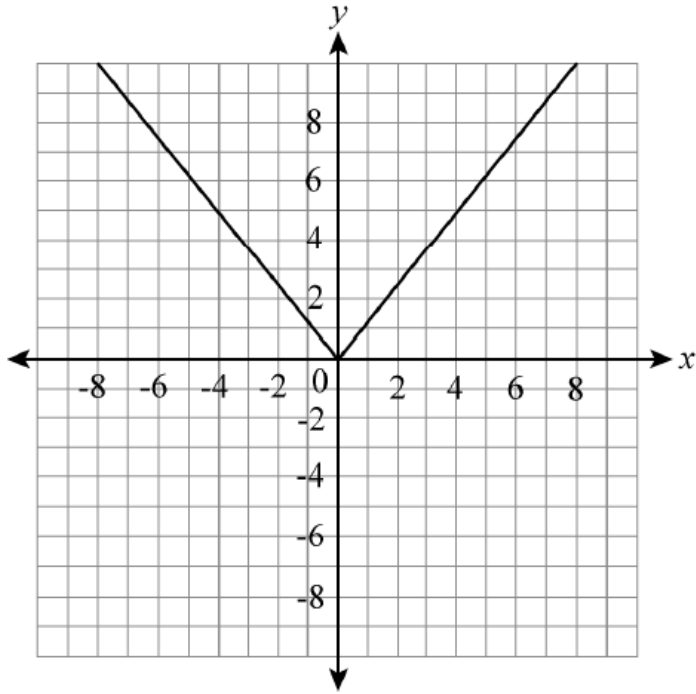
23. Two road-building teams plan to build a road 126 miles long. Team A will start at one end of the road, and can build 3 miles of road per day. Team B will start 2 days later at the other end of the road, and can build 5 miles per day. If both teams continue to build road at the same rate, how many days will Team A have worked when the road is finished?

- A. 15
- B. 17
- C. 35
- D. 42

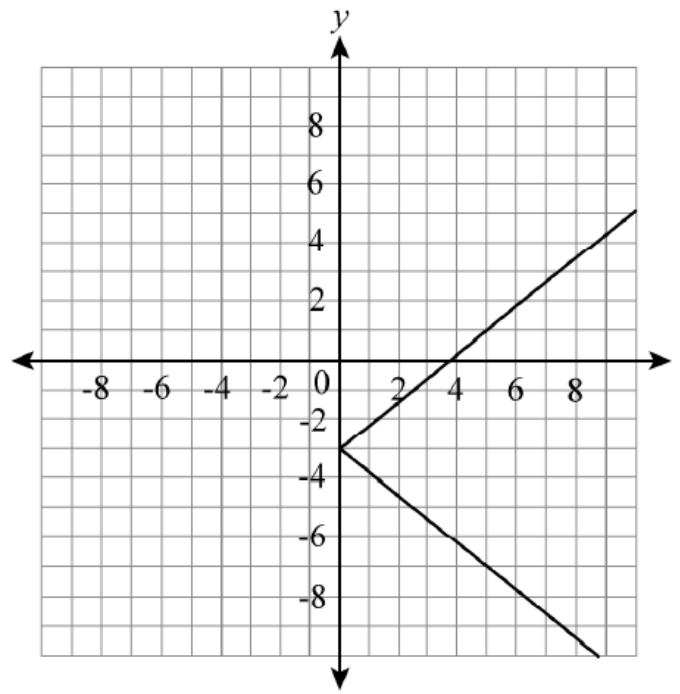
MA.912.A.2.3

24. Which graphic representation best shows a relation that is NOT a function?

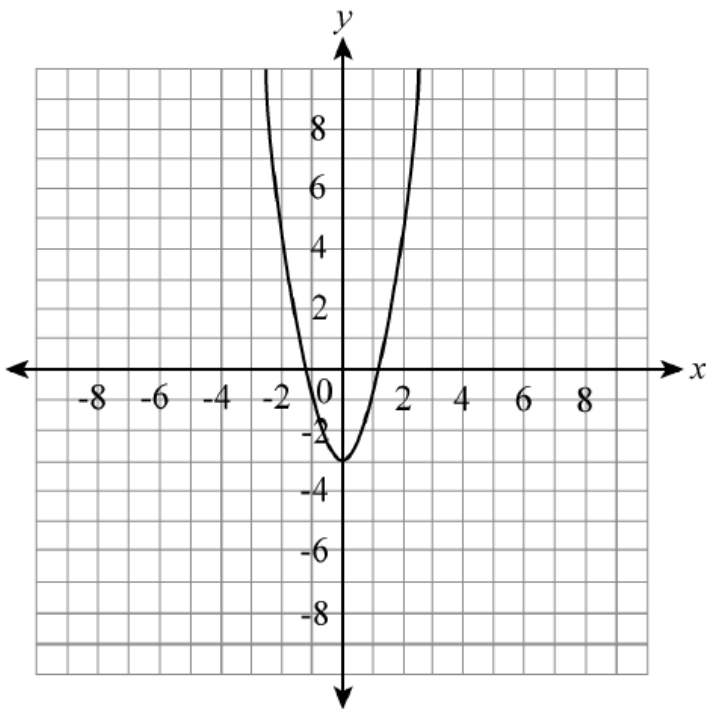
A.



B.



C.



D.

