Name _____

Date_____

8th Algebra 1 Semester 1 Exam (Fall 2016)

A.5.A

1. What is the solution of 4x - 5 = 16x - 41? Record your answer on the griddable section of your answer document.

$4x - 5 = 16x - 41$

$+5 \quad +5$

$4x = 16x - 36$

$-16x \quad -16x$

$\frac{-12x}{-12} = \frac{-36}{-12}$

$\boxed{x = 3}$

$x = 3$

A.2.D

2. The value of y varies directly with x. Which function represents this relationship between x and y if y = 12/5 and x = 6?

a. y = 12/5x b. y= 5/12x c. y = 2/5x d. y= 72/5x

$k = \frac{y}{x} = \frac{12/5}{6}$

$\frac{\cancel{12}^{2}}{5} \cdot \frac{1}{\cancel{6}_{1}} = \frac{2}{5}$

$\boxed{y = \frac{2}{5}x}$

C

3. For the function f, f(-2) = 6 and f(6) = -18. If y = f(x),what is the value of y when x = 6?

A.12.B

a. -18 b. -2 c. -12 d. -3

A

4. The standard form equation of a line is 2x + By = 6. What is the value of B if the line passes through the point (4, 2) ?

a. 2 b. 4 c. -1 d.1

A.3.C

$2x + By = 6$

$2(4) + B(2) = 6$

$8 + 2B = 6$

$-8 \quad -8$

$\frac{2B}{2} = \frac{-2}{2}$

$B = -1$

C

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5. Which equation represents the line that passes through (4,-8) and is parallel to the line that passes through (0,2) and (-8, -4)?

A.3A

a. y=3/4x -11 b. y=-4/3x - 1 c. y= 3/4x +11 d. y= 4/3x +1

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4-2}{-8-0} = \frac{-6}{-8} = \frac{3}{4}$

$y = mx + b$

$-8 = \frac{3}{4}(4) + b$

$-8 = 3 + b$

$-3 \quad -3$

$-11 = b$

A

6. A plumber charges $170 for a service call that required two hours of work. On another 4-hour service call, he charged $290. Which statement is true?

A.3B

a. The slope is 85. It represents the cost of a service call.

b. The slope is 85. It represents the labor charges per hour.

c. The slope is 60. It represents the labor charges per hour.

d. The slope is 60. It represents the cost of a service call.

2	170
4	290

120

$60/hr

C

7. Which equation represents the line that passes through (3, 5) and is parallel to the line represented by the equation y= 1/2x + 4?

A.2E

Same slope

a. y= 1/2x + 3.5 b. y = 2x + 5 c. y= 1/2x + 5 d. y= -2x + 4.5

A

$y = mx + b$

$5 = \frac{1}{2}(3) + b$

$5 = \frac{3}{2} + b$

$-\frac{3}{2} \quad -\frac{3}{2}$

$b = 3.5$

8. True or false. The ordered pairs (2,3), (3, 6), (6, 7), (8, 6), (2, 8) represent a relation. This relation is a function.

a. True b. False

B

A.12A

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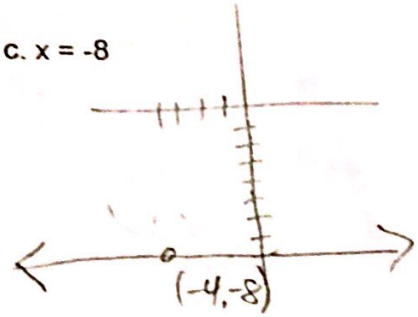
opp. reciprocal slope

9. Which is the equation of a line that is perpendicular to the y-axis and passes through the point (-4, -8)?

C A.2G

a. y = -4 b. x = -4 c. y = -8 c. x = -8



10. Which equation has an x-intercept of 4 and a y-intercept of 7?

a. 7x + 4y = 28
b. -7x + 4y = -28
c. -7x - 4y = -28
d. 7x - 4y = -28

C A.2B

A) $\frac{C}{A} = \frac{-28}{7} = 4$ $\frac{C}{B} = \frac{28}{4} = 7$

B) $\frac{-28}{-7} = 4$ $\frac{-28}{4} = -7$

C) $\frac{-28}{-7} = 4$ $\frac{-28}{-4} = 7$

D) $\frac{-28}{7} = -4$ $\frac{-28}{-4} = 7$

11. Which of the following values of x is a solution of the inequality -5(x - 4) ≤ 4x - 7 ?

I. X = 3 II. x = 14 III. x = -5 IV. x = - 12

C A.5B

a. I only
b. III and IV
c. I and II
d. I, III, and IV

$-5(x-4) \le 4x-7$

$-5x+20 \le 4x-7$

$-4x \quad -4x$

$-9x+20 \le -7$

$-20 \quad -20$

$\frac{-9x}{-9} \le \frac{-27}{-9}$

$x \ge 3$

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12. Which inequality is equivalent to $4 \geq x - 7 \geq -6$?

$+7 \quad +7 \quad +7$

$11 \geq x \geq 1$

a. $1 \leq x \leq 11$
b. $-13 \leq x \leq -3$
c. $11 \leq x \leq 1$
d. $-3 \leq x \leq -13$

A

A.5B

13. Line b is perpendicular to the line $y = -\frac{3}{4}x + 3$ and passes through the point (3, -6). Which of the following is an equation for line b?

$m = 4/3$

$y = mx + b$

$-6 = \frac{4}{3}(3) + b$

$-6 = 4 + b$

$-4 \quad -4$

$-10 = b$

a. $y = 4/3x - 6$
b. $y = 4/3x - 10$
~~c.~~ $y = -4/3x - 2$
~~d.~~ $y = -4/3x + 4$

B

A.2F

14. How would you write $2x + 3y = -8$ in slope-intercept form?

$-2x \quad -2x$

$\frac{3y}{3} = \frac{-2x - 8}{3}$

$y = -\frac{2}{3}x - \frac{8}{3}$

a. $y = -\frac{2}{3}x - 8$
b. $y = -2x - 8$
c. ~~$y = \frac{2}{3}x - 8/3$~~
d. $y = -2/3x - 8/3$

D

A.2B

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15. Which equation is equivalent to ⅔ x - ½ y = -3?

a. 4x - 3y = -18
b. 2x - 4y = -6
c. 6x - 6y = -18
d. 2y - 3y = -9

A

A.2B

$6\left[\frac{2}{3}x - \frac{1}{2}y = -3\right]$

$\frac{12}{3}x - \frac{6}{2}y = -18$

$4x - 3y = -18$

16. Write a linear function with the values f(4)= -2 and f(12) = 10.

a. y= ⅔ x - 4 ⅔
b. y= 1.5x - 8
c. y= 1.5x - 10
d. y= ⅔ x + ⅔

B

A.2B

(4, -2) (12, 10)

$m = \frac{10 \overset{+}{-} 2}{12-4}$ $\frac{12}{8} = \frac{3}{2}$

$y = mx + b$

$-2 = \frac{3}{2}(4) + b$

$-2 = \frac{12}{2} + b$

$-2 = 6 + b$

$-6 \quad -6$

$b = -8$

17. Which of the following is a solution of 2x + 3y = -9 ?

I. (0, -3) II. (3, 1) III. (3, -1) IV. (3/2, -4) V. (-4, -⅓)

a. II only
b. I, III, and V
c. I, III, and IV
d. I, IV, and V

D

A.2A

I. $2(0) + 3(-3) = -9$ ✓

II $2(3) + 3(1) = -9$ X

III $2(3) + 3(-1) = -9$ X

IV $2(3/2) + 3(-4) = -9$

$3 + -12 = -9$ ✓

V $2(-4) + 3(-1/3) = -9$ ✓

$-8 + -1$

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18. What is the slope in the equation y = -4x - 7? Record your answer in the griddable section of your answer document.

-4

8.5B $m = \boxed{-4}$

19. What slope and point are represented in the point-slope equation y - 4 = ⅔(x + 2)?

a. Slope: ⅔ , Point: (-4, 2)
b. Slope: ⅔ , Point: (2, -4)
c. Slope ⅔ , Point: (4, -2)
d. Slope ⅔ , Point: (-2, 4)

D

A.2B $m = 2/3$ $(-2, 4)$

Evaluate. 7.3A

20. -5 + (-4) - 13

$-9 - 13$

$\boxed{-22}$

21. 2 - (-10) - 16

$12 - 16$

$\boxed{-4}$

22. (-4)(-6)(3)

$(24)3$

$\boxed{72}$

23. 12.8 ÷ 0.4

$\boxed{32}$

$0.4\overline{)12.8}$

$4\overline{)128}$

32

12

08

-8

0

24. 3.42 x 1.2

$\boxed{4.104}$

$$\begin{array}{r} 3.42 \\ \times\ 1.2 \\ \hline 684 \\ 3420 \\ \hline 4.104 \end{array}$$

25. On the back of this sheet tell me about 1 mathematical concept that you learned well this semester and why you were able to learn it well. Then, tell me about 1 mathematical concept that you still feel uneasy about and what I can do to help you better learn it.

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