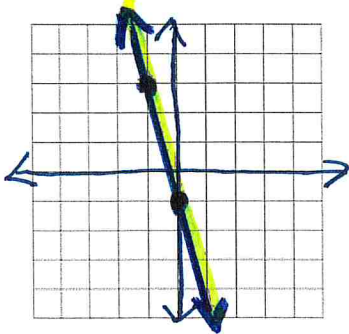


2 Topic Assessment Form A

Answer Key

Practice
Test

1. What is the graph of
- $y = -4x - 1$
- ?



2. Which of the following is an equation of the line through
- $(2, 3)$
- and
- $(-1, -12)$
- ?

$$m = \frac{-12 - 3}{-1 - 2} = \frac{-15}{-3} = 5$$

$$y = 5x + b$$

$$3 = 5(2) + b$$

$$b = -7$$

$$y = 5x - 7$$

- (A) $y = \frac{1}{5}x + \frac{13}{5}$ (B) $y = -\frac{1}{5}x + \frac{17}{5}$
 (C) $y = 5x - 7$ (D) $y = -5x + 7$

3. Yuson must complete 30 hours of community service. She does 2 hours each day. Write a linear equation to represent the hours Yuson has left after
- x
- days.

$$y = -2x + 30$$

4. For the graph of the equation you wrote in Item 3, what does the y -intercept represent?
- (A) hours left to complete
 (B) total hours of service
 (C) hours completed each day
 (D) days it takes to complete 30 hours

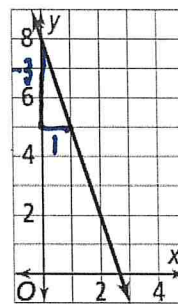
5. What is an equation of the horizontal line that passes through
- $(5, -7)$
- ?

$$y = -7$$

6. For which values of
- A
- ,
- B
- , and
- C
- will
- $Ax + By = C$
- be a vertical line through the point
- $(8, 6)$
- ?

- (A) $A = 1, B = 0, C = 6$ $1x + 0y = 8$
 (B) $A = 1, B = 0, C = 8$ $x = 8$
 (C) $A = 0, B = 1, C = 6$
 (D) $A = 0, B = 1, C = 8$

7. What is an equation in point-slope form of the line shown in the graph, using the point
- $(2, 2)$
- ?



$$m = -\frac{3}{1} \text{ or } -3$$

$$y - 2 = -3(x - 2)$$

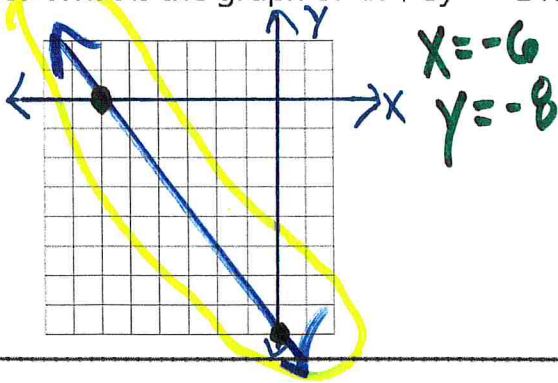
8. What is an equation in point-slope form of the line that passes through the point
- $(4, -1)$
- and has slope 6?

- (A) $y + 1 = 6(x - 4)$
 (B) $y + 1 = -6(x - 4)$
 (C) $y - 1 = 6(x + 4)$
 (D) $y - 1 = -6(x + 4)$

9. What is an equation in point-slope form of the line that passes through
- $(-7, 1)$
- and
- $(-3, 9)$
- ?

- (A) $y + 3 = 2(x - 9)$
 (B) $y - 3 = 2(x + 9)$
 (C) $y + 9 = 2(x - 3)$
 (D) $y - 9 = 2(x + 3)$

10. What is the graph of $4x + 3y = -24$?



11. Write the equation in standard form of the line that has x-intercept 3 and y-intercept 5.

$(3,0)$ $(0,5)$
 $5x + 3y = 15$

12. What is the equation in standard form of the line $y = \frac{1}{9}x + 5$?

(A) $x = 9y - 45$ $9y = x + 45$
 (B) $x - 9y = -45$ $-x + 9y = 45$
 (C) $9y = x + 45$
 (D) $9y - x = 45$
 ↓ multiply all 3 terms by a negative 1
 $x - 9y = -45$

13. What are the x-intercept and the y-intercept of the graph of $9x - 7y = -63$?

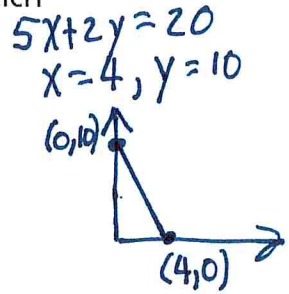
- (A) x-intercept: 7; y-intercept: -9
 (B) x-intercept: -7; y-intercept: 9
 (C) x-intercept: 9; y-intercept: -7
 (D) x-intercept: -9; y-intercept: 7

14. Derek has \$20 to spend on used books. Hardcover books cost \$5 each and paperbacks cost \$2 each. What equation in standard form determines the number x of hardcover books and the number y of paperback books he can buy?

$5x + 2y = 20$

15. For the situation in Item 14, which of the following represents a possible combination of books that Derek can buy? Select all that apply.

- (A) $(-2, 15)$ (B) $(0, 10)$
 (C) $(2, 5)$ (D) $(3, \frac{5}{2})$



16. Determine whether the lines are parallel, perpendicular, or neither.

$5x + 2y = 14$ and $y = -5x + 9$

$2y = -5x + 14$
 $y = -\frac{5}{2}x + 7$

Neither

17. Which lines are parallel to $8x + 2y = 7$? Select all that apply.

- (A) $y - 1 = 4(x + 8)$ $2y = -8x + 7$
 (B) $y = -4x + 15$ $y = -4x + \frac{7}{2}$
 (C) $16x + 4y = 9$
 (D) $y = -4x$

18. Write the equation in slope-intercept form of the line that passes through $(6, -11)$ and is parallel to the graph of $y = -\frac{2}{3}x + 12$.

$y = -\frac{2}{3}x + b$
 $-11 = -\frac{2}{3}(\frac{6}{1}) + b$
 $-11 = -4 + b$
 $b = -7$
 $y = -\frac{2}{3}x - 7$

19. Line v passes through point $(6, 6)$ and is perpendicular to the graph of $y = \frac{3}{4}x - 11$. Line w is parallel to line v and passes through point $(-6, 10)$. What is the equation in slope-intercept form of line w ?

Line v :
 $y = -\frac{4}{3}x + b$
 $6 = -\frac{4}{3}(\frac{6}{1}) + b$
 $6 = -8 + b$
 $y = -\frac{4}{3}x + 14$
 Line w : $y = -\frac{4}{3}x + b$
 $10 = -\frac{4}{3}(-6) + b$; $10 = 8 + b$, $b = 2$
 $y = -\frac{4}{3}x + 2$

20. What is the y-intercept of the line $y + 11 = -2(x + 1.5)$?

$y + 11 = -2x - 3$
 $y = -2x - 14$

-14

1 Topic Assessment Form A

1. Which of the sets shown includes the elements of Set Z that are both odd numbers and multiples of 5?

$$Z = \{-15, -12, -10, 2, 7, 10, 20\}$$

- (A) $\{-15\}$
 (B) $\{-15, -10, 10, 20\}$
 (C) $\{-15, -10, 7, 10, 20\}$
 (D) $\{-15, -12, -10, 2, 7, 10, 20\}$

2. Order the numbers from least to greatest.

$$\frac{25}{7}, 3.6, \sqrt{12}, \sqrt{\frac{49}{4}}$$

$$\sqrt{12}, \sqrt{\frac{49}{4}}, \frac{25}{7}, 3.6$$

3. Which of the following will result in a rational number? Select all that apply.

- (A) $6\frac{4}{5} + \frac{\sqrt{9}}{4}$ (B) $6\frac{4}{5} - \frac{\sqrt{5}}{7}$
 (C) $6\frac{4}{5} \cdot \frac{\sqrt{9}}{4}$ (D) $6\frac{4}{5} \div \frac{\sqrt{5}}{7}$

4. What is the value of x in this equation?

$$5x - 2(2x - 1) = 6$$

- (A) 3 $5x - 4x + 2 = 6$
 (B) 4 $x + 2 = 6$
 (C) 7 $x = 4$
 (D) 8

5. The sum of three consecutive odd integers is 105. What are the three numbers?

$$33, 35, 37$$

$$(x) + (x+2) + (x+4) = 105$$

$$3x + 6 = 105$$

$$3x = 99$$

$$x = 33$$

$$x+2 = 35$$

$$x+4 = 37$$

6. Write the formula for the volume of a cone $V = \frac{1}{3}\pi r^2 h$ in terms of h.

Find the height h of a cone with volume $V = 32\pi \text{ cm}^3$ and radius $r = 4 \text{ cm}$.

$$3[V = \frac{1}{3}\pi r^2 h] = 3V = \pi r^2 h$$

$$\text{Formula: } h = \frac{3V}{\pi r^2}$$

$$\text{Height: } h = \frac{3(32)}{\pi(4)^2} = 1.91 \text{ cm}$$

7. How many solutions are there to this equation?

$$7x - 3(x - 1) = 2(2x + 3)$$

$$4x + 3 = 4x + 6$$

- (A) no solution
 (B) exactly one solution
 (C) at least two solutions
 (D) infinitely many solutions

8. Coulomb's Law $F = k\frac{qQ}{r^2}$ relates the force F between two charges q and Q, which are a distance of r units apart. Solve the formula for k.

$$[F = k\frac{qQ}{r^2}] \cdot \frac{r^2}{qQ} = k = \frac{Fr^2}{qQ}$$

9. Find the value of x in this equation.

$$3\left[\frac{1}{3}(6x - 5) - x = \frac{1}{3} - 2(x + 1)\right] \Rightarrow X = 0$$

$$6x - 5 - 3x = 1 - 6(x + 1); 3x - 5 = -6x - 5$$

$$9x = 0$$

10. Solve the equation $y = a\left(\frac{y}{a} - b\right)$ for the variable x.

- (A) $x = \frac{y}{a} + b$ (B) $x = \frac{a+b}{y}$
 (C) $x = y + \frac{b}{a}$ (D) $x = \frac{y+b}{a}$