

# MTH 05, Test 2, V. 4b, 10/23/18

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NAME: \_\_\_\_\_

There are twenty-two questions, each worth 5 points. For multiple-choice questions, circle your answer. For free-response questions, SHOW ALL WORK to receive credit.

1. Solve:  $\frac{3x}{7} \leq \frac{15}{14}$

(a)  $x < \frac{2}{5}$

(b)  $x \leq \frac{5}{2}$

(c)  $x \geq \frac{5}{2}$

(d)  $x = 5$

2. Which equation's graph is parallel to that of  $y = 3x - 14$ ?

(a)  $y = -3x + 8$

(b)  $y = \frac{1}{3}x + 7$

(c)  $y = 3x + 12$

(d)  $y = -\frac{1}{3}x - 11$

3. Find the equation of the horizontal line passing through the point  $(-3, -4)$ .

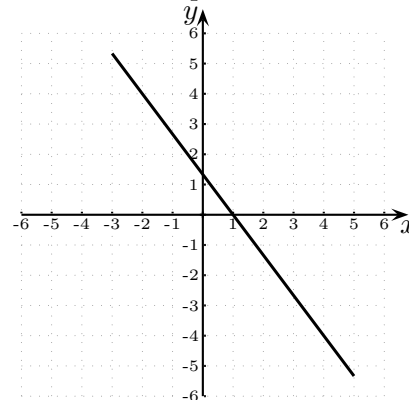
(a)  $x = -3$

(b)  $y = \frac{3}{4}x$

(c)  $y = -4$

(d)  $y = \frac{4}{3}x$

4. What is the slope of the line in the graph?



(a)  $-\frac{3}{4}$

(b)  $\frac{4}{3}$

(c)  $\frac{3}{4}$

(d)  $-\frac{4}{3}$

**5.** Solve for  $t$  in the expression  $A = rt - 3$ .

(a)  $t = Ar + 3$

(b)  $t = \frac{A + 3}{r}$

(c)  $t = 3$

(d)  $t = \frac{r}{A} + 3$

**6.** Solve for  $t$  in the equation  $P = \frac{t}{4} + a$ .

(a)  $t = 4a + P$

(b)  $t = \frac{P - 4a}{2}$

(c)  $t = \frac{P - a}{4}$

(d)  $t = 4(P - a)$

**7.** What is the slope-intercept form of the equation  $5x - 4y = 20$ ?

(a)  $y = 5x + 24$

(b)  $y = \frac{3}{2}x + 3$

(c)  $y = \frac{4}{5}x + 4$

(d)  $y = \frac{5}{4}x - 5$

**8.** The area  $A$  of a trapezoid is given by the formula

$A = \frac{B + b}{2} \cdot h$ . If  $A = 90$ ,  $B = 6$ , and  $b = 3$ , what is the value of  $h$ ?

(a) 20

(b)  $\frac{99}{2}$

(c) 18

(d) -53

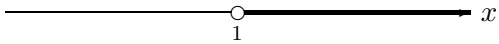
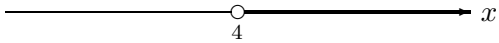
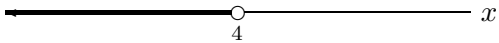
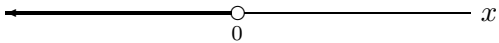
9. Use the formula  $F = \frac{9}{5}C + 32$  to find  $F$  when  $C = 15$ .

- (a)  $-4$
- (b)  $37$
- (c)  $59$
- (d)  $81.2$

10. Find  $x$ -intercept and  $y$ -intercept for the graph of the equation  $2x - 7y = 14$ .

- (a)  $x$ -intercept:  $(-7, 0)$  and  $y$ -intercept:  $(0, 2)$
- (b)  $x$ -intercept:  $(7, 0)$  and  $y$ -intercept:  $(0, -2)$
- (c)  $x$ -intercept:  $(-14, 2)$  and  $y$ -intercept:  $(7, 14)$
- (d)  $x$ -intercept:  $(0, 0)$  and  $y$ -intercept:  $(2, 7)$

11. Pick the graph of the solution to the inequality  $10x - 10 > 6x + 6$ .

- (a) 
- (b) 
- (c) 
- (d) 

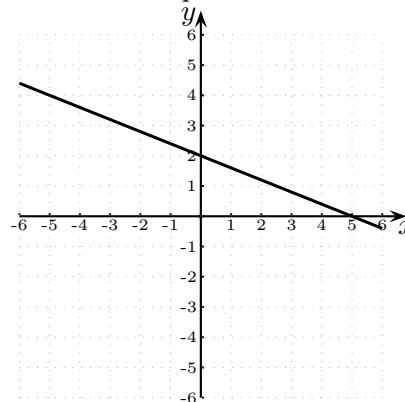
12. Find the slope and  $y$ -intercept for the graph of the equation  $3x + 7y = 28$ .

- (a) Slope =  $\frac{3}{7}$  and  $y$ -intercept:  $(0, -4)$
- (b) Slope =  $\frac{3}{7}$  and  $y$ -intercept:  $(4, 0)$
- (c) Slope =  $-\frac{3}{7}$  and  $y$ -intercept:  $(0, 4)$
- (d) Slope =  $-\frac{3}{7}$  and  $y$ -intercept:  $(0, 28)$

**13.** What is the slope of the line connecting the points  $(4, 10)$  and  $(6, 3)$ ?

- (a)  $\frac{13}{10}$
- (b)  $4$
- (c)  $-\frac{7}{2}$
- (d)  $\frac{1}{4}$

**14.** Choose the equation of the line in the graph.



- (a)  $y = 2$
- (b)  $5x - y = 2$
- (c)  $5x - 2y = 10$
- (d)  $2x + 5y = 10$

\_\_\_\_\_Free response questions start here. SHOW ALL WORK!!!\_\_\_\_\_

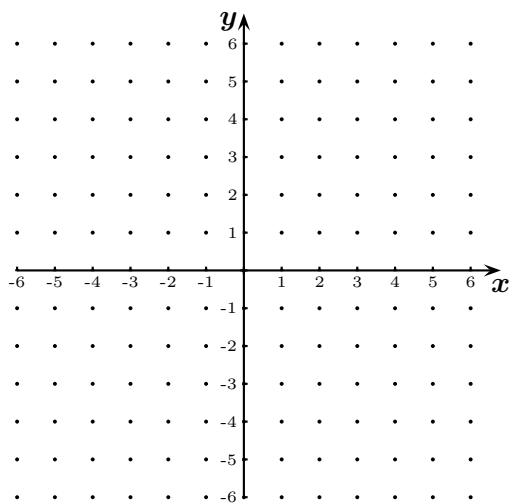
**15.** Solve and graph the solution on the number line:  $3 - 5(2x + 5) \geq 2(x + 4) - 7x$ .

**16.** Find an equation for the line passing through the points  $(2, 5)$  and  $(-2, 7)$ .

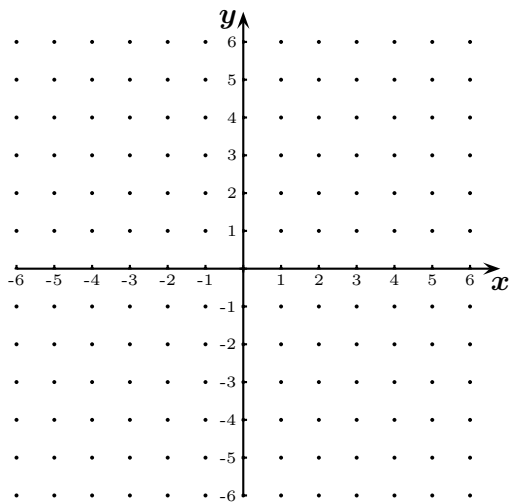
17. Find the slope and  $y$ -intercept of the line with equation  $2x + 5y = 15$ .

18. Find the equation of the line passing through the point  $(5, -2)$  and perpendicular to the line  $-2x + 5y = 1$ .

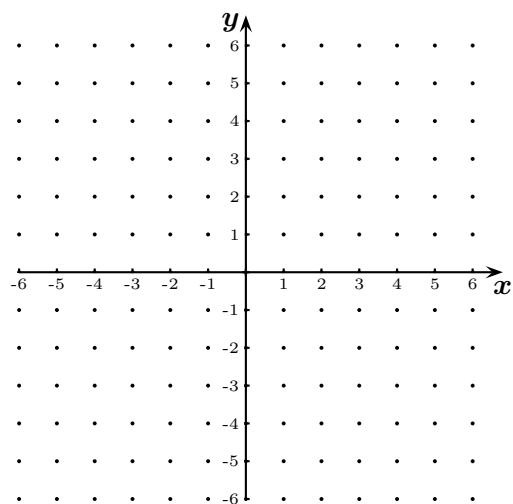
19. Graph  $y = -\frac{3}{5}x + 2$  indicating at least two points.



20. Graph the equation  $x = 3$  indicating at least two points.



21. Graph  $5x - 3y = 15$  indicating at least two points.



22. Solve the following system of equations. If there is no unique solution, say whether the system has *no solutions* or *infinitely many solutions*.

$$\begin{cases} 3x + 2y = 10 \\ 5x - 3y = 4 \end{cases}$$