MTH 05, Test 2, V. 4, 10/19/17 Luis Fernández

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 full credit.

1. Find the x-coordinate of the solution of the following system of equations.
$$\begin{cases} 2x + 3y = 2 \\ -x - 3y = 2 \end{cases}$$
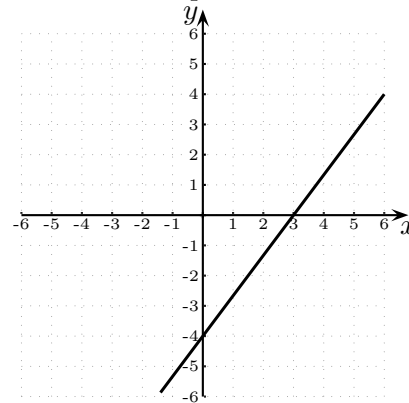
(a) 4

(b) -4

(c) -2

(d) 2

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 vertical 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 $A = rt$.

(a) $t = \dfrac{A}{r}$

(b) $t = Ar$

(c) $t = 2$

(d) $t = \dfrac{r}{A}$

6. Solve for t in the equation $P = 2t + a$.

(a) $t = 2$

(b) $a = P + 2t$

(c) $t = \dfrac{P - a}{2}$

(d) $t = 2P - a$

7. What is the slope-intercept form of the equation $6x + 4y = 12$?

(a) $y = -6x + 3$

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

(c) $y = 6x + 12$

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

8. The volume V of a pyramid is given by the equation $V = \dfrac{1}{3}Bh$. If $V = 100$ and $h = 5$, what is the value of B?

(a) 200
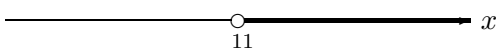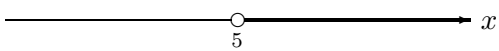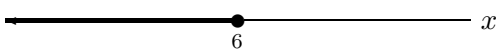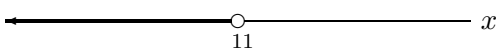
(b) $\dfrac{23}{2}$

(c) 60

(d) -53

9. Use the formula $F = \dfrac{9}{5}C + 32$ to find F when $C = -20$.

(a) -4

(b) 21

(c) 4

(d) -112

10. Find x-intercept and y-intercept for the graph of the equation $x + 3y = 6$.

(a) x-intercept: $(6, 0)$ and y-intercept: $(0, -2)$

(b) x-intercept: $(0, 0)$ and y-intercept: $(1, 4)$

(c) x-intercept: $(-6, 0)$ and y-intercept: $(0, 2)$

(d) x-intercept: $(6, 0)$ and y-intercept: $(0, 2)$

11. Pick the graph of the solution to the inequality $7x - 5 > 6x + 6$.

(a) x — open circle at 11

(b) x — open circle at 5

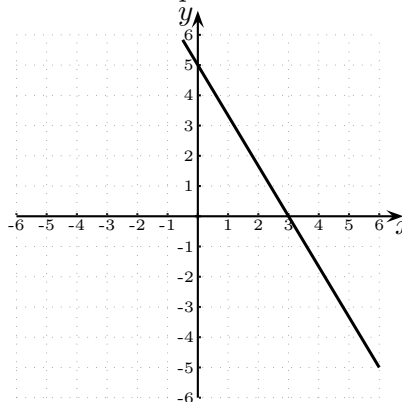(c) x — closed circle at 6

(d) x — open circle at 11

12. Find the slope and y-intercept for the graph of the equation $2x - 5y = 15$.

(a) Slope $= -\dfrac{2}{5}$ and y-intercept: $(0, 3)$

(b) Slope $= \dfrac{2}{5}$ and y-intercept: $(0, 15)$

(c) Slope $= \dfrac{2}{5}$ and y-intercept: $(0, -3)$

(d) Slope $= -\dfrac{2}{5}$ and y-intercept: $(0, -3)$

13. What is the slope of the line connecting the points $(4, 13)$ and $(6, 5)$?

(a) $\dfrac{1}{4}$

(b) -4

(c) $-\dfrac{1}{4}$

(d) 4

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

(a) $5x + 3y = 15$

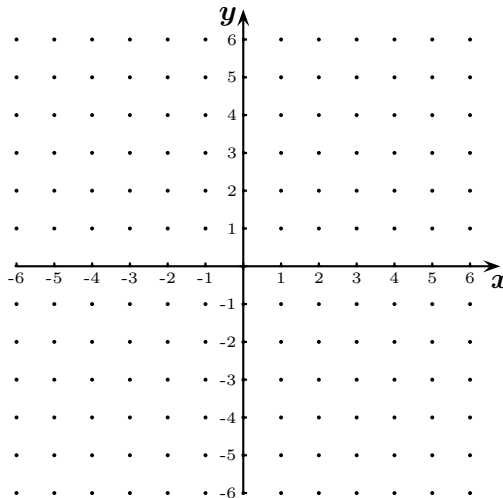(b) $-5x + 3y = 15$

(c) $5x - 3y = 15$

(d) $3x - 5y = 15$

———————Free response questions start here. SHOW ALL WORK!!!———————

15. Find an equation for the line passing through the points $(3, 8)$ and $(-3, 6)$.
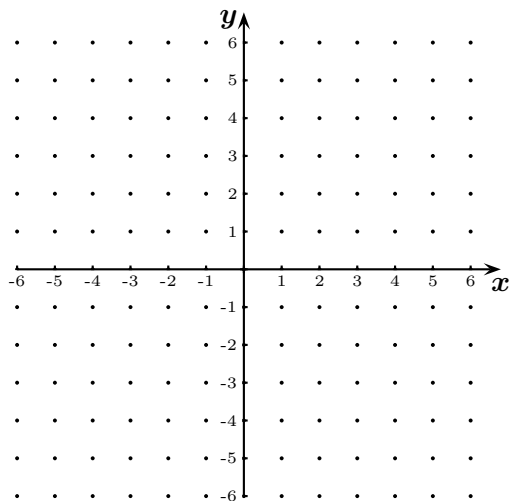
16. Find the equation of the line passing through the point $(3, -4)$ and perpendicular to the line $2x + 3y = 5$.

17. Solve and graph the solution on the number line: $2 - 4(2x + 5) \geq 5(x + 3) - 2x$.
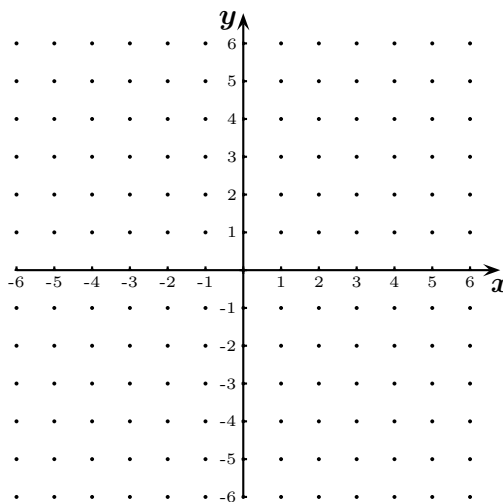
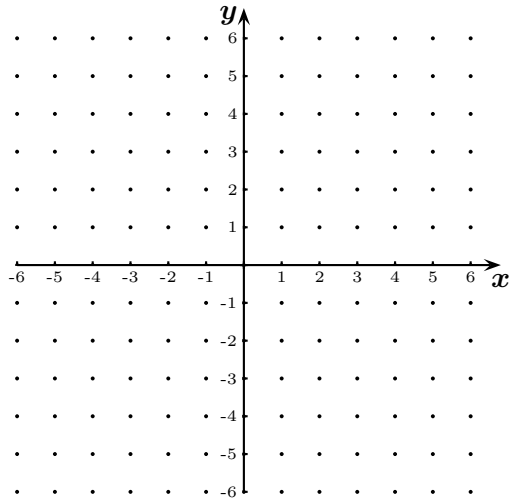**18.** Graph $y = \dfrac{3}{4}x - 3$ indicating at least two points.

19. Graph $3x + 5y = 15$ indicating at least two points.

20. Graph the solution of the inequality $2x - y < 4$.

21. Graph $y = 4$ 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*.

$$\begin{cases} 3x + 5y = 1 \\ 2x + 4y = 2 \end{cases}$$