HW 6-5: Parallel & Perpendicular Lines

Determine whether the graphs of each pair of equations are *parallel*, *perpendicular*, or *neither*. Explain.

1. $y = 2x + 4$

$y = 2x - 10$

2. $y = 5x - 8$

$y = 3x - 8$

3. $y = 7x + 3$

$y = \dfrac{1}{7}x - 6$

4. $y = 4x + 3$

$4x + y = 3$

5.

$y = -2x$

$2x + y = 3$

6.

$5x - 3y = -6$

$3x + 5y = 10$

7.

$-3x + 4y = 8$

$-4x + 3y = -6$

8.

$2x + 5y = 15$

$3x + 5y = 15$

Write an equation in slope-intercept form for each line described.

9. Passes through (-7, -4), perpendicular to $y = \dfrac{1}{2}x + 9$

10. Passes through K(3,7), parallel to $\overleftrightarrow{LM}$ with L(-1,-2) and M(-4,8).

11. Passes through (6, 2), parallel to $y = -\dfrac{2}{3}x + 1$

**12.** Passes through (-2, 2), perpendicular to $y = -5x - 8$

Write an equation in slope-intercept form for each line described.

13. Passes through (4, 2) that is parallel to the line $y = 3x + 23$

14. Write an equation of the line that is parallel to the graph of $y = 7x - 3$ and passes through the origin.

15. Contains the point (21, 12) that is parallel to the line containing the points (30,8) and (-15,-7).
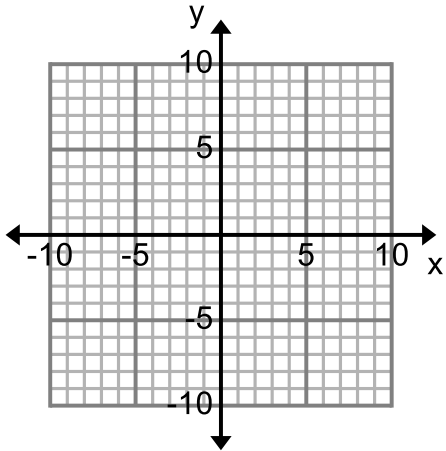
16. a) On the graph to the right, draw a line perpendicular to the line shown. Be sure to label which points you used.
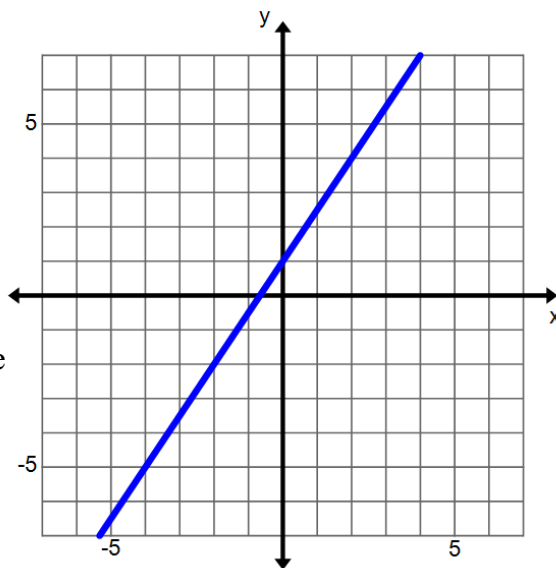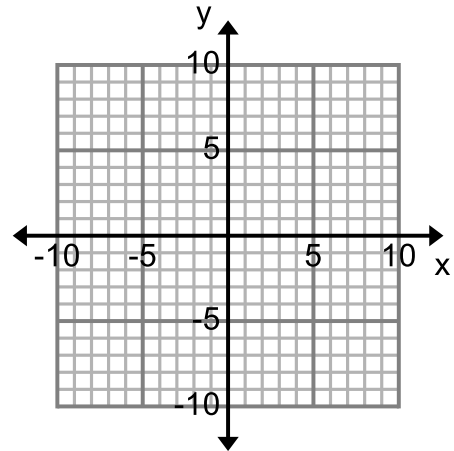
b) On the graph to the right, draw a line parallel to the line shown. Be sure to label which points you used.
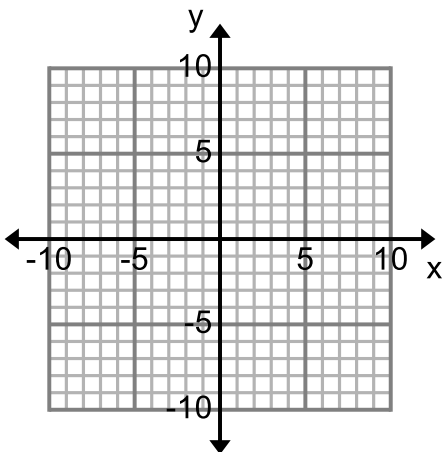
Graph the line that satisfies each condition.

17. Passes through A(2, -5), parallel to $\overleftrightarrow{BC}$
with B(1, 3) and C(4, 5)

18. Passes through $(-1, -10)$, parallel to $y = 7$.

19. Passes through X(1, -4), parallel to $\overleftrightarrow{YZ}$
with Y(5, 2) and Z(-3, -5)

20. Passes through D(-5, -6), perpendicular to
$\overleftrightarrow{FG}$ with F(-2, -9) and G(1, -5)