Lesson 2.4 Worksheet

Name: Key

Write an equation, in slope-intercept form, of the line that has the given slope and y-intercept.

1.) $m = 0, b = 2$

$y = 2$

2.) $m = -\frac{5}{4}, b = 7$

$y = -\frac{5}{4}x + 7$

3.) $m = 6, b = 0$

$y = 6x$

Write an equation, in slope-intercept form, of the line that passes through the given point and has the given slope.

4.) $(3, -1), m = -3$

$y + 1 = -3(x - 3)$

$y + 1 = -3x + 9$

$y = -3x + 8$

5.) $(-4, 3), m = 2$

$y - 3 = 2(x + 4)$

$y - 3 = 2x + 8$

$y = 2x + 11$

6.) $(-4, 2), m = \frac{3}{2}$

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

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

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

Write an equation of the line, in slope-intercept form, that passes through the given point and satisfies the given condition.

7.) $(-3, -5)$; parallel to $y = -4x + 1$ ($m = -4$)

$y + 5 = -4(x + 3)$

$y + 5 = -4x - 12$

$y = -4x - 17$

8.) $(4, 1)$; perpendicular to $y = \frac{1}{3}x + 3$ ($m = -3$)

$y - 1 = -3(x - 4)$

$y - 1 = -3x + 12$

$y = -3x + 13$

9.) $(2, 8)$; parallel to $-6x + 2y = -4$

$m = 3$

$2y = 6x - 4$

$y = 3x - 2$

$y - 8 = 3(x - 2)$

$y - 8 = 3x - 6$

$y = 3x + 2$

10.) $(3, -1)$; perpendicular to $8x - 2y = -2$

$m = -\frac{1}{4}$

$-2y = -8x - 2$

$y = 4x + 1$

$y + 1 = -\frac{1}{4}(x - 3)$

$y + 1 = -\frac{1}{4}x + \frac{3}{4}$

$y = -\frac{1}{4}x - \frac{1}{4}$

Write an equation of the line, in slope-intercept form, that passes through the given points.

11.) $(-1,3),(2,9)$

$m = \frac{9-3}{2-(-1)} = \frac{6}{3} = \boxed{2}$

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

$y - 3 = 2x + 2$

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

12.) $(-2,-3),(2,-1)$

$m = \frac{-1+3}{2+2} = \frac{2}{4} = \boxed{\frac{1}{2}}$

$y + 3 = \frac{1}{2}(x+2)$

$y + 3 = \frac{1}{2}x + 1$

$\boxed{y = \frac{1}{2}x - 2}$

13.) $(-5,-2),(-3,8)$

$m = \frac{8+2}{-3+5} = \frac{10}{2} = \boxed{5}$

$y + 2 = 5(x+5)$

$y + 2 = 5x + 25$

$\boxed{y = 5x + 23}$

Write an equation in standard form $Ax + By = C$ of the line that satisfies the given conditions. Use integer values for A, B, and C.

14.) $m = -\frac{3}{2}$, passes through $(4,-7)$

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

$y + 7 = -\frac{3}{2}x + 6$

$y = -\frac{3}{2}x - 1$

$(\frac{3}{2}x + y = -1) *$ multiply by 2

$\boxed{3x + 2y = -2}$

15.) passes through $(-1,3)$ and $(-6,-7)$

$m = \frac{-7-3}{-6-(-1)} = \frac{-10}{-5} = \boxed{2}$

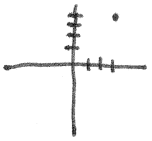
$y - 3 = 2(x+1)$

$y - 3 = 2x + 2$

$y = 2x + 5$

$\boxed{-2x + y = 5}$

Write an equation of the line that passes through the point (3, 4) and satisfies the given condition.



16.) Parallel to $y = -2$ $\boxed{y = 4}$

17.) Perpendicular to $y = -2$ $\boxed{x = 3}$

18.) Parallel to $x = -2$ $\boxed{x = 3}$

19.) Perpendicular to $x = -2$ $\boxed{y = 4}$

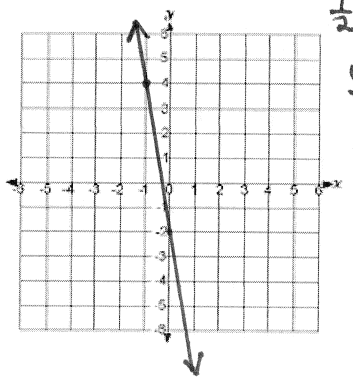
Graph the equation using any method.

20.) $3x = -\frac{1}{2}y - 1$

$\frac{1}{2}y + 3x = -1$

$\frac{1}{2}y = -3x - 1$

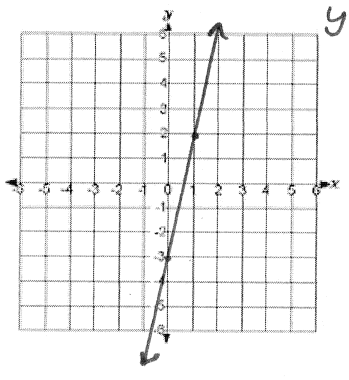
$y = -6x - 2$



21.) $5x - y = 3$

$-y = -5x + 3$

$y = 5x - 3$



22.) $y = 2x + 6$