Name Key Block _____ Date _____

Writing Equations of Lines Practice

Write the slope-intercept form of the equation of the line through the given point with the given slope.

1) through: $(3, 2)$, slope $= -1$

$y = mx + b$

$y = -1x + b$

$2 = -1(3) + b$

$2 = -3 + b$

$+3 \quad +3$

$5 = b$

$y = -x + 5$

2) through: $(-1, 0)$, slope $= 2$

$y = mx + b$

$y = 2x + b$

$0 = 2(-1) + b$

$0 = -2 + b$

$+2 \quad +2$

$2 = b$

$y = 2x + 2$

3) through: $(-5, 4)$, slope $= -\frac{8}{5}$

$y = mx + b$

$y = -\frac{8}{5}x + b$

$4 = -\frac{8}{5}\left(\frac{-5}{1}\right) + b$

$4 = 8 + b$

$-8 \quad -8$

$-4 = b$

$y = -\frac{8}{5}x - 4$

4) through: $(3, -1)$, slope $= -2$

$y = mx + b$

$y = -2x + b$

$-1 = -2(3) + b$

$-1 = -6 + b$

$+6 \quad +6$

$5 = b$

$y = -2x + 5$

Write the slope-intercept form of the equation of the line through the given points.

5) through: $(-2, 5)$ and $(-1, -4)$

$+1 \begin{matrix} -2, 5 \\ -1, -4 \end{matrix} \rightarrow -9 \quad \frac{\Delta y}{\Delta x} = \frac{-9}{1} = -9$

$y = -9x + b$

$-4 = -9(-1) + b$

$-4 = 9 + b$

$-9 \quad -9$

$-13 = b$

$$y = -9x - 13$$

6) through: $(0, -5)$ and $(-3, -4)$ y-int

$-3 \begin{matrix} 0, -5 \\ -3, -4 \end{matrix} \rightarrow +1 \quad \frac{\Delta y}{\Delta x} = \frac{-1}{3}$

$$y = -\frac{1}{3}x - 5$$

7) through: $(3, -5)$ and $(4, 3)$

$+1 \begin{matrix} 3, -5 \\ 4, 3 \end{matrix} \rightarrow +8 \quad \frac{\Delta y}{\Delta x} = \frac{8}{1} = 8$

$y = 8x + b$

$3 = 8(4) + b$

$3 = 32 + b$

$-32 \quad -32$

$-29 = b$

$$y = 8x - 29$$

8) through: $(2, -4)$ and $(-5, 3)$

$-7 \begin{matrix} 2, -4 \\ -5, 3 \end{matrix} \rightarrow +7 \quad \frac{\Delta y}{\Delta x} = \frac{7}{-7} = -1$

$y = -1x + b$

$-4 = -1(2) + b$

$-4 = -2 + b$

$+2 \quad +2$

$-2 = b$

$$y = -x - 2$$