

6-2 Answers

Write an equation of the line that passes the given point and has the given slope.

1) (1,1); $m=3$

$$\begin{aligned}
 y &= mx + b \\
 1 &= 3(1) + b \\
 1 &= 3 + b \\
 \begin{array}{r} -3 & -3 \\ \hline -2 & = b \end{array}
 \end{aligned}$$

$$y = 3x - 2$$

2) (-4,7); $m=-5$

$$\begin{aligned}
 y &= mx + b \\
 7 &= -5(-4) + b \\
 7 &= 20 + b \\
 \begin{array}{r} -20 & -20 \\ \hline -13 & = b \end{array}
 \end{aligned}$$

$$y = -5x - 13$$

3) (8, -4) $m = -\frac{3}{4}$

$$\begin{aligned}
 y &= mx + b \\
 -4 &= -\frac{3}{4}(8) + b \\
 -4 &= -6 + b \\
 \begin{array}{r} +6 & +6 \\ \hline 2 & = b \end{array}
 \end{aligned}$$

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

4) Describe and correct the error in finding the y-intercept of the line that passes through the point (6, -3) and has a slope of -2. *Subbed x and y in wrong*

$$\begin{aligned}
 -3 &= -2(6) + b \\
 -3 &= -12 + b \\
 \begin{array}{r} +12 & +12 \\ \hline 9 & = b \end{array}
 \end{aligned}$$

$$y = -2x + 9$$

Write an equation of the line that passes through the given points.

5) (1,4), (2,7) $m = \frac{7-4}{2-1} = \frac{3}{1} = 3$

$$\begin{aligned}
 4 &= 3(1) + b \\
 4 &= 3 + b \\
 \begin{array}{r} -3 & -3 \\ \hline 1 & = b \end{array}
 \end{aligned}$$

$$y = 3x + 1$$

6) (10, -5), (-5, 1)

$$-5 = \left(-\frac{2}{5}\right)(10) + b$$

$$-5 = -4 + b$$

$$\begin{array}{r} +4 & +4 \\ \hline -1 & = b \end{array}$$

$$\begin{aligned}
 \frac{1+5}{-5+10} &= \frac{6}{-15} \\
 &= -\frac{2}{5}
 \end{aligned}$$

$$y = -\frac{2}{5}x - 1$$

Write an equation of the line (see book).

7)

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

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

$$1 = 16 + b$$

$$\begin{array}{r} -16 \quad -16 \\ 1 = 16 + b \\ \hline -15 = b \end{array}$$

$$y = 4x - 15$$

8)

$$m = \frac{-2}{4} = -\frac{1}{2}$$

$$0 = (-\frac{1}{2})(1) + b$$

$$0 = -\frac{1}{2} + b$$

$$\begin{array}{r} +\frac{1}{2} \quad +\frac{1}{2} \\ 0 = -\frac{1}{2} + b \\ \hline \frac{1}{2} = b \end{array}$$

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

9) $f(-2) = 15, f(1) = 9$ $(-2, 15), (1, 9)$

$$\frac{15-9}{-2-1} = \frac{6}{-3} = -2$$

$$9 = -2(1) + b$$

$$9 = -2 + b$$

$$\begin{array}{r} +2 \quad +2 \\ 9 = -2 + b \\ \hline 11 = b \end{array}$$

$$y = -2x + 11$$

10) $f(2) = 7, f(4) = 6$ $(2, 7), (4, 6)$

$$m = \frac{6-7}{4-2} = -\frac{1}{2}$$

$$6 = -\frac{1}{2}(4) + b$$

$$6 = -2 + b$$

$$\begin{array}{r} +2 \quad +2 \\ 6 = -2 + b \\ \hline 8 = b \end{array}$$

$$y = -\frac{1}{2}x + 8$$

Write an equation that represents the linear function shown in the table or mapping diagram. (see book).

11)

$$(9, 0), (6, 2) \quad \frac{2-0}{6-9} = \frac{2}{-3}$$

$$0 = -\frac{2}{3}(9) + b$$

$$0 = -6 + b$$

$$\begin{array}{r} +6 \quad +6 \\ 0 = -6 + b \\ \hline 6 = b \end{array}$$

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

12)

$$(1, 2), (2, 8) \quad \frac{8-2}{2-1} = \frac{6}{1} = 6$$

$$2 = 6(1) + b$$

$$2 = 6 + b$$

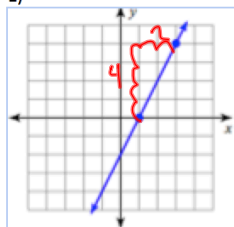
$$\begin{array}{r} -6 \quad -6 \\ 2 = 6 + b \\ \hline -4 = b \end{array}$$

$$y = 6x - 4$$

SKILLZ REVIEW

Find the slope of the line.

1)



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

Simplify.

$$2) -2(4x - 4) + x$$

$$\begin{array}{r} -8x + 8 + x \\ \hline -7x + 8 \end{array}$$

Solve.

$$3) -3 = -5 - 2v$$

$$\begin{array}{r} +5 \quad +5 \\ -3 = -5 - 2v \\ \hline 2 = -2v \\ \hline -2 = -2 \\ \hline 1 = v \end{array}$$