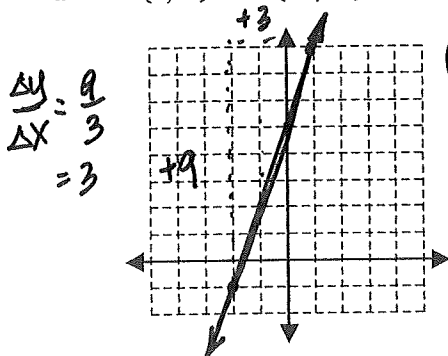


Writing Equations of Lines Practice

Graph the line that passes through the points. Then write the equation of the line in slope-intercept form.

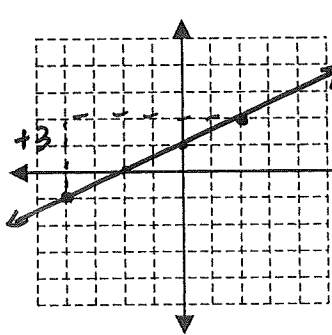
1. (1, 8) and (-2, -1)



$$\frac{\Delta y}{\Delta x} = \frac{9}{3} = 3$$

$$y = 3x + 5$$

2. (-4, -1) and (2, 2)



$$\frac{\Delta y}{\Delta x} = \frac{3}{6} = \frac{1}{2}$$

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

Use the slope formula to find the slope of the line between the given points.

3. (-4, 1) and (2, -5)

$$\frac{\Delta y}{\Delta x} = \frac{1 - (-5)}{-4 - 2} = \frac{6}{-6} = -1$$

4. (2, -3) and (-3, 7)

$$\frac{\Delta y}{\Delta x} = \frac{-3 - 7}{2 - (-3)} = \frac{-10}{5} = -2$$

Write the equation in slope-intercept form for the line with the given slope that contains the given point.

5. slope = 1; (-2, 3)

$$\begin{aligned} y &= x + b \\ 3 &= (-2) + b \\ \underline{+2 \quad +2} \\ 5 &= b \end{aligned}$$

$$y = x + 5$$

6. slope = -3; (-1, 6)

$$\begin{aligned} y &= -3x + b \\ 6 &= -3(-1) + b \\ 6 &= 3 + b \\ \underline{-3 \quad -3} \\ 3 &= b \end{aligned}$$

$$y = -3x + 3$$

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

7. (0, -5) and (3, 4)

$$\begin{aligned} \frac{\Delta y}{\Delta x} &= \frac{-5 - 4}{0 - 3} \\ &= \frac{-9}{-3} \\ &= 3 \end{aligned}$$

$$\begin{aligned} y &= 3x + b \\ -5 &= 3(0) + b \\ -5 &= b \end{aligned}$$

$$y = 3x - 5$$

8. (2, 4) and (1, -2)

$$\begin{aligned} \frac{\Delta y}{\Delta x} &= \frac{4 - (-2)}{2 - 1} \\ &= \frac{6}{1} \\ &= 6 \end{aligned}$$

$$\begin{aligned} y &= 6x + b \\ 4 &= 6(2) + b \\ 4 &= 12 + b \\ \underline{-12 \quad -12} \\ -8 &= b \end{aligned}$$

$$y = 6x - 8$$

9. (2, -2) and (-4, 1)

$$\begin{aligned} \frac{\Delta y}{\Delta x} &= \frac{-2 - 1}{2 - (-4)} \\ &= \frac{-3}{6} \\ &= -\frac{1}{2} \end{aligned}$$

$$\begin{aligned} y &= -\frac{1}{2}x + b \\ -2 &= -\frac{1}{2}(2) + b \\ -2 &= -1 + b \\ \underline{+1 \quad +1} \\ -1 &= b \end{aligned}$$

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

10. (4, 3) and (-8, 0)

$$\begin{aligned} \frac{\Delta y}{\Delta x} &= \frac{3 - 0}{4 - (-8)} \\ &= \frac{3}{12} \\ &= \frac{1}{4} \end{aligned}$$

$$\begin{aligned} y &= \frac{1}{4}x + b \\ 0 &= \frac{1}{4}(-8) + b \\ 0 &= -2 + b \\ \underline{+2 \quad +2} \\ 2 &= b \end{aligned}$$

$$y = \frac{1}{4}x + 2$$

11. (9, -2) and (-3, 2)

$$\frac{\Delta y}{\Delta x} = \frac{2 - (-2)}{-3 - 9}$$

$$= \frac{4}{-12}$$

$$= -\frac{1}{3}$$

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

$$2 = -\frac{1}{3}(-3) + b$$

$$2 = 1 + b$$

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

$$1 = b$$

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

12. (-3, -3) and (7, 2)

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

$$= \frac{-5}{-10}$$

$$= \frac{1}{2}$$

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

$$-3 = \frac{1}{2}(7) + b$$

$$-3 = \frac{7}{2} + b$$

$$\frac{-\frac{7}{2} - \frac{7}{2}}{-3/2} = \frac{-7}{-3/2} = b$$

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

13. (1, 2) and (7, 2)

$$\frac{\Delta y}{\Delta x} = \frac{2 - 2}{1 - 7} = \frac{0}{-6}$$

$$= 0$$

$$y = 0x + b$$

$$2 = 0(1) + b$$

$$2 = b$$

$$y = 2$$

14. (5, -6) and (5, -3)

$$\frac{\Delta y}{\Delta x} = \frac{-6 - (-3)}{5 - 5} = \frac{-3}{0}$$

undefined slope
OR
no slope

$$x = 5$$