

Answers to examples in the PowerPoint presentation:

1.

$$\begin{aligned} \perp m &= -8 \\ -5 &= -8(1) + b \\ -5 &= -8 + b \\ +8 \quad +8 \\ 3 &= b \\ \\ y &= -8x + 3 \end{aligned}$$

2.

$$\begin{aligned} \perp m &= 3 \\ 6 &= 3(7) + b \\ 6 &= 21 + b \\ -21 \quad -21 \\ -15 &= b \\ \\ y &= -3x - 15 \end{aligned}$$

3.

$$\begin{aligned} 5x - y &= -4 \\ -5x \quad \quad -5x \\ -y &= -5x - 4 \\ \frac{-y}{-1} &= \frac{5x}{-1} - \frac{4}{-1} \\ y &= -5x + 4 \\ \\ \perp m &= \frac{1}{5} \\ -2 &= \frac{1}{5}(3) + b \\ -2 &= \frac{3}{5} + b \\ \frac{-3}{5} \quad \frac{-3}{5} \\ -\frac{10}{5} - \frac{3}{5} &= b \\ -\frac{13}{5} &= b \\ \\ y &= \frac{1}{5}x - \frac{13}{5} \end{aligned}$$

4.

$$\begin{aligned} \perp m &= -\frac{9}{5} \\ 5 &= -\frac{9}{5}(-5) + b \\ 5 &= 9 + b \\ -9 \quad -9 \\ -4 &= b \\ \\ y &= -\frac{9}{5}x - 4 \end{aligned}$$

5.

$$\begin{aligned} \perp m &= \frac{1}{2} \\ 4 &= \frac{1}{2}(3) + b \\ 4 &= \frac{3}{2} + b \\ \frac{-3}{2} \quad \frac{-3}{2} \\ \frac{8}{2} - \frac{3}{2} &= b \\ \frac{5}{2} &= b \\ \\ y &= \frac{1}{2}x + \frac{5}{2} \end{aligned}$$

6.

$$\begin{aligned} 2x + 3y &= 12 \\ -2x \quad \quad -2x \\ 3y &= -2x + 12 \\ \frac{3y}{3} &= \frac{-2x}{3} + \frac{12}{3} \\ y &= -\frac{2}{3}x + 4 \\ \\ \perp m &= \frac{3}{2} \\ 6 &= \frac{3}{2}(2) + b \\ 6 &= 3 + b \\ -3 \quad -3 \\ 3 &= b \\ \\ y &= \frac{3}{2}x + 3 \end{aligned}$$

7.

$$\begin{aligned} \perp m &= \frac{6}{5} \\ -4 &= \frac{6}{5}(10) + b \\ -4 &= 12 + b \\ -12 \quad -12 \\ -16 &= b \\ \\ y &= \frac{6}{5}x - 16 \end{aligned}$$

8.

$$\begin{aligned} \perp m &= -1 \\ -1 &= -1(4) + b \\ -1 &= -4 + b \\ -4 \quad -4 \\ -5 &= b \\ \\ y &= -x - 5 \end{aligned}$$

9.

$$\begin{aligned}
 9x + 5y &= 3 \\
 -9x &\quad -9x \\
 5y &= -9x + 3 \\
 \frac{5y}{5} &= \frac{-9x}{5} + \frac{3}{5} \\
 y &= -\frac{9}{5}x + \frac{3}{5} \\
 \perp m &= \frac{5}{9} \\
 4 &= \frac{5}{9}(18) + b \\
 4 &= 10 + b \\
 -10 &\quad -10 \\
 -6 &= b \\
 \\ 
 y &= \frac{5}{9}x - 6
 \end{aligned}$$

10.

$$\begin{aligned}
 \perp m &= -\frac{2}{3} \\
 5 &= -\frac{2}{3}(-6) + b \\
 5 &= 4 + b \\
 -4 &\quad -4 \\
 1 &= b \\
 \\ 
 y &= -\frac{2}{3}x + 1
 \end{aligned}$$