Exercise 8

For the following exercises, determine whether the lines given by the equations below are parallel, perpendicular, or neither parallel nor perpendicular:

$$3y + 4x = 12$$

$$-6y = 8x + 1$$

Solution

Solve the given equations for y.

$$\begin{cases} 3y = 12 - 4x \\ -6y = 8x + 1 \end{cases}$$

$$\begin{cases} y = 4 - \dfrac{4}{3}x \\ y = -\dfrac{4}{3}x - \dfrac{1}{6} \end{cases}$$

The lines are parallel because the slopes $(-4/3$ and $-4/3)$ are identical.