

Exercise 12

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

$$\begin{aligned} -2x + y &= 3 \\ 3x + \frac{3}{2}y &= 5 \end{aligned}$$

Solution

Solve each of these equations for y .

$$\begin{cases} y = 2x + 3 \\ \frac{3}{2}y = -3x + 5 \end{cases}$$
$$\begin{cases} y = 2x + 3 \\ y = -2x + \frac{10}{3} \end{cases}$$

The slopes are neither identical nor negative reciprocals, so the lines are neither parallel nor perpendicular.

