Try These...

1. (5, k) (k, -5) $m = \frac{-1}{3}$

2. (3, k) (-1, 5) Perpendicular to $\frac{3}{4}$

3. **A line passes through points (4k,8) & (2k,6). If the slope is perpendicular to the x-axis, find k.**

1. $(5, k)$ $(k, -5)$ $m = \frac{-1}{3}$

x_1, y_1 x_2, y_2

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{-1}{3} = \frac{-5-k}{k-5}$$

$$-1(k-5) = 3(-5-k)$$

$$-1k+5 = -15-3k$$

$$-1k+3k = -15-5$$

$$2k = -20$$

$$k = -10$$

2. $(3, k)\ (-1, 5)$ Perpendicular to $\frac{3}{4} \perp \frac{-4}{3}$

$x_1\ y_1\ x_2\ y_2$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{-4}{3} = \frac{5-k}{-1-3}$$

-4

$$3(5-k) = -4\,(-1-3)$$

$-4(-4)$

$$15 - 3k = 4 + 12$$

$$-3k = 4 + 12 - 15$$

$$-3k = 1$$

$$k = \frac{1}{-3} \quad \text{or} \quad k = \frac{-1}{3}$$

3. **A line passes through points (4k,8) & (2k,6). If the slope is perpendicular to the x-axis, find k.**

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$\frac{1}{0} = \frac{6-8}{2k-4k}$

$1(2k-4k) = 0(6-8)$

$2k-4k = 0$

$-2k = 0$

$k = 0$

x-axis

$\frac{0}{1} \perp \frac{1}{0}$