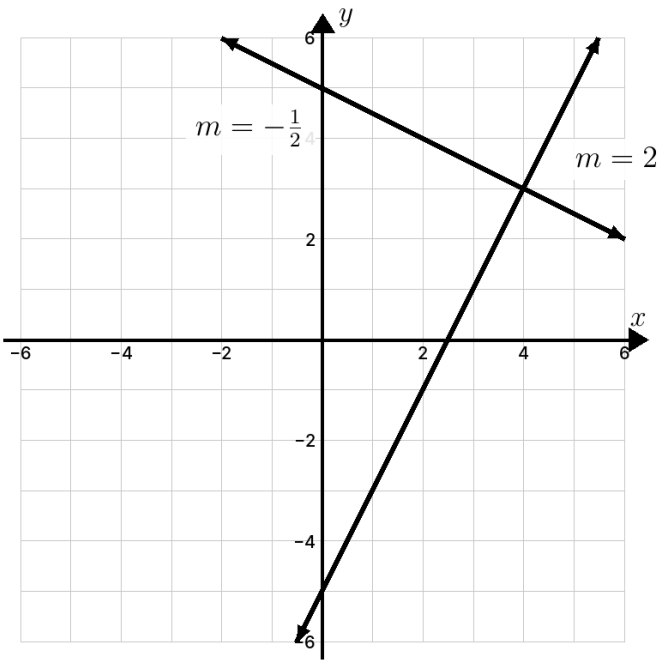
# Parallel and Perpendicular

GL11-V1 · storyboard · GL11 Parallel and perpendicular lines. Read each picture with its sentences.

**Picture 1**




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

Perpendicular

1. These lines have slopes negative a half and slope 2.
2. The slopes multiply to negative 1, and the lines meet at right angles: they are perpendicular.

**Picture 2**

The line through $(-3, 4)$ perpendicular to $x - 2y = 7$.

$$x - 2y = 7 : \ \ m = \frac{1}{2}$$

$$\frac{1}{2} \to -2 \quad \text{flip, and change the sign}$$

$$y - 4 = -2(x + 3)$$

$$\boxed{2x + y = -2} \quad \text{standard form}$$

3. Find the line through negative 3, 4 perpendicular to x minus 2 y equals 7.
4. The given line has slope one half.
5. Flip it and change the sign: the new slope is negative 2.
6. Through the point: y minus 4 equals negative 2 times x plus 3.
7. In standard form: 2 x plus y equals negative 2.

**Picture 3**

**Trap** perpendicular to $m = 2$

$$\times \; m = \frac{1}{2}$$

$$\checkmark \quad m = -\frac{1}{2}$$

8. Watch for the trap: forgetting the sign.
9. Perpendicular to slope 2 is negative a half: flip and change the sign.