2.6 Parallel and Perpendicular Lines

Parallel Lines:

they have the same slope

NEVER EVER CROSS

Write a parallel equation:

$(12, 5)$ $y = \frac{2}{3}x - 1$

x_1, y_1 m

$$y - y_1 = m(x - x_1)$$

$$y - 5 = \frac{2}{3}(x - 12)$$

$$y - 5 = \frac{2}{3}x - 8$$

$+5$ $+5$

$$\boxed{y = \frac{2}{3}x - 3}$$

1. A line passes through $(-3, -1)$ and is parallel to the graph of $y = 2x + 3$. What equation represents the line in slope-intercept form?

$(-3, -1)$
$x \quad y$

$y = 2x + 3$

$m = 2$

$y - y_1 = m(x - x_1)$

$y + 1 = 2(x + 3)$

$y + 1 = 2x + 6$

$-1 \qquad -1$

$y = 2x + 5$

A. $(1, 3); y = 3x + 2$

$m=3$

$y - y_1 = m(x - x_1)$

$y - 3 = 3(x - 1)$

$y - 3 = 3x - 3$

$+3 \qquad +3$

$y = 3x$