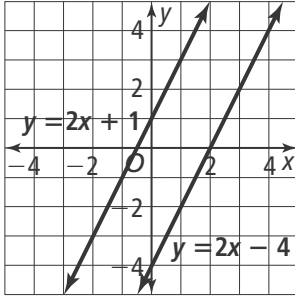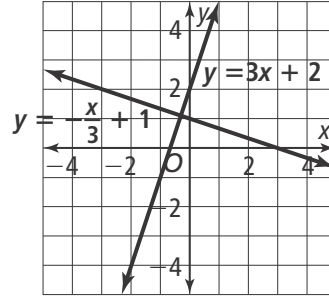## 2-4 Reteach to Build Understanding

Parallel and Perpendicular Lines

1. The graphs show a pair of parallel and a pair of perpendicular lines.

Nonvertical lines are parallel if they have the same slope, but different y-intercepts. The lines have a slope of 2 and different y-intercepts.

Two nonvertical lines are perpendicular if the product of their slopes is -1. The lines have slopes of 3 and $-\frac{1}{3}$.

Determine whether the lines for each pair of equations are *parallel, perpendicular* or *neither*. Circle your response.

$y = 2x - 4$ $y = -2x + 5$	Parallel	Perpendicular	Neither
$y = \frac{2}{3}x + 1$ $y = -\frac{3}{2}x - 2$	Parallel	Perpendicular	Neither
$y = -3x - 1$ $y = -3x + 2$	Parallel	Perpendicular	Neither

2. Don says that of $y = \frac{3}{4}x + 2$ is parallel to $y = \frac{3}{4} + 8x$. Is he correct? Why or why not?

3. What is an equation in slope-intercept form of the line that passes through (2, 11) and is perpendicular to the graph of $y = \frac{1}{4}x - 5$? Complete the missing steps.

First, identify the slope of the given line. The slope is $\frac{1}{4}$. The slope of the perpendicular line is the negative reciprocal. The slope of the perpendicular line is _____.

$y - y_1 = m(x - x_1)$	Point-slope form of a linear equation.
$y - $ _____ $= -4(x - $ _____ $)$	Substitute (2, 11) for (x_1, y_1) and -4 for m.
$y - $ _____ $= -4x + $ _____	Apply the Distributive Property and solve for y.

An equation in slope-intercept form is _____.