

**5-6 Parallel & Perpendicular Lines**

For 1-5, write the equation of the line described, in slope-intercept form:

1. parallel to
- $y = 2x - 7$
- and passing through
- $(-3, -1)$

$$y = 2x + B$$

$$-1 = 2(-3) + B$$

$$-1 = -6 + B$$

$$5 = B$$

$$y = 2x + 5$$

2. parallel to
- $y = \frac{5}{3}x - 3$
- and passing through
- $(-3, 4)$

$$y = \frac{5}{3}x + B$$

$$4 = \frac{5}{3}(-3) + B$$

$$4 = -5 + B$$

$$9 = B$$

$$y = \frac{5}{3}x + 9$$

3. perpendicular to
- $y = -3x - 2$
- passing through
- $(-10, 3)$
- .

$$y = \frac{1}{2}x + B$$

$$3 = \frac{1}{2}(-10) + B$$

$$3 = -5 + B$$

$$8 = B$$

$$y = \frac{1}{2}x + 8$$

4. perpendicular to
- $y = -\frac{3}{5}x + 4$
- passing through
- $(-9, -1)$
- .

$$y = \frac{5}{3}x + B$$

$$-1 = \frac{5}{3}(-9) + B$$

$$-1 = -15 + B$$

$$14 = B$$

$$y = \frac{5}{3}x + 14$$

5. Write the equation of a line parallel to
- $-4x + 5y = -20$
- , passing through
- $(0, 2)$

$$5y = 4x - 20$$

$$y = \frac{4}{5}x - 4$$

$$y = \frac{4}{5}x + B$$

$$2 = \frac{4}{5}(\frac{10}{1}) + B$$

$$2 = 8 + B$$

$$-6 = B$$

$$y = \frac{4}{5}x - 6$$