Algebra I Worksheet #3 Unit 7 selected solutions

Write the equation of each line described. If the line is oblique, then write the slope-intercept equation.

5. The line with slope 3/8 through the point (4, 3).

This is an oblique line. Use the point-slope equation.

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

$$x_1 = 4 \quad y_1 = 3 \quad m = \frac{3}{8}$$

$$y - 3 = \frac{3}{8}(x - 4)$$

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

$$\boxed{y = \frac{3}{8}x + \frac{3}{2}}$$

8. The line through (6, 0) and (4, 5).

This is an oblique line.

Find the slope.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 0}{4 - 6} = \frac{5}{-2} = \frac{-5}{2}$$

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

$$x_1 = 6 \quad y_1 = 0 \quad m = \frac{-5}{2}$$

$$y - 0 = \frac{-5}{2}(x - 6)$$

$$\boxed{y = \frac{-5}{2}x + 15}$$

10. The line through (4, 3) and (1, 2).

This is an oblique line.

Find the slope.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - 3}{1 - 4} = \frac{-1}{-3} = \frac{1}{3}$$

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

$$x_1 = 4 \quad y_1 = 3 \quad m = \frac{1}{3}$$

$$y - 3 = \frac{1}{3}(x - 4)$$

$$y - 3 = \frac{1}{3}x - \frac{4}{3}$$

$$\boxed{y = \frac{1}{3}x + \frac{5}{3}}$$