



Mathematics 52  
Take-Home Quiz 4  
Fall 2016

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Course ID: (27501) and (27488)

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Note: This quiz covers some problems from the Slope of a Line and Equation of a Line.

Problem 1: A line passes through  $(2, -3)$  and has a slope of  $-7$ . Write the equation for this line.

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

$$y - (-3) = -7(x - 2)$$

$$y + 3 = -7(x - 2)$$

$$y + 3 = -7x + 14$$

$$y = -7x + 14 - 3$$

$$y = -7x + 11$$

This is the equation of the line.

Problem 2: A line passes through  $(4, -1)$  and it is perpendicular to another line:  $5y - 20 = 2x$ .

Write the equation for this line.

$l_1: (4, -1)$ ,  $l_2: 5y - 20 = 2x$

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

$$y - (-1) = m(x - 4)$$

$$y + 1 = m(x - 4)$$

$$5y = 2x + 20 \Rightarrow y = \frac{2}{5}x + 4$$

If/since  $l_1 \perp l_2$ , then  $m_1 \cdot m_2 = -1$

$$m_1 \cdot \frac{2}{5} = -1 \rightarrow m_1 = -\frac{5}{2}$$

Therefore,  $y + 1 = -\frac{5}{2}(x - 4)$

$$y = -\frac{5}{2}x + 10 - 1$$

$$y = -\frac{5}{2}x + 9$$

Equation of the line

Math is Amazing!!!  
Practice + Study = Success  
Good Luck  
Mohammed Kaabar

