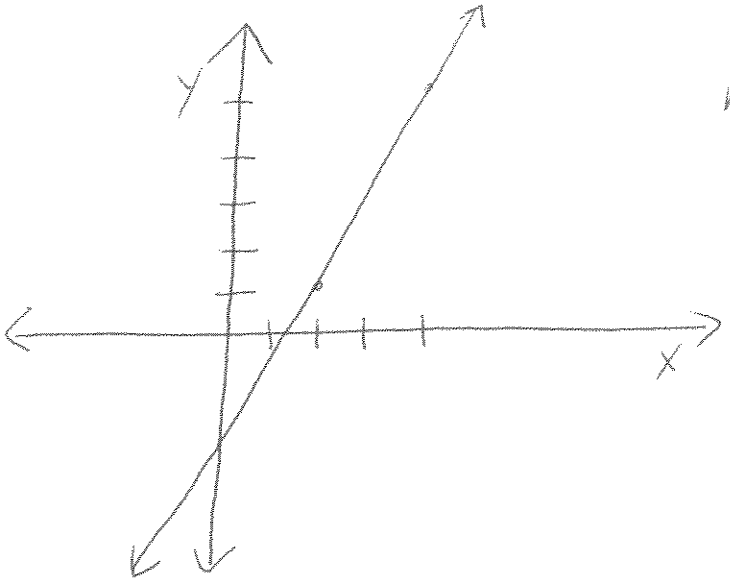
Math 1010 - Quiz 4

University of Utah

Fall 2009

Name: Solutions

1. Find the slope of the line through the points $(2, 1)$ and $(4, 5)$, and sketch a graph of the line. (4 points)



$$m = \frac{5-1}{4-2} = \frac{4}{2} = \boxed{2}$$

2. Find the slope-intercept form of the line through the point $(3, 2)$ with slope $m = 4$. (4 points)

$$(y-2) = 4(x-3)$$

$$\Rightarrow y - 2 = 4x - 12$$

$$\Rightarrow \boxed{y = 4x - 10}$$

3. Will the lines given by the general equations:

$$2x + 3y = 7$$

$$3x - 2y = 2$$

be parallel, perpendicular, or neither. Explain why. (4 points)

slope of line 1: $3y = -2x + 7$

$\Rightarrow y = -\frac{2}{3}x + \frac{7}{3}$ $\quad m_1 = -\frac{2}{3}$

slope of line 2: $-2y = -3x + 2$

$\Rightarrow y = \frac{3}{2}x - 1$ $\quad m_2 = \frac{3}{2}$

$m_1 \cdot m_2 = \left(-\frac{2}{3}\right)\left(\frac{3}{2}\right) = -1$ So, perpendicular

4. Graph the linear inequality $y > 3x - 2$. (3 points)