MAT 104 Quiz 10

Wednesday, September 29, 2004

1. Find an equation of the line passing the point $(1, -2)$ with slope -2

   Use the point-slope form of a line

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

   where $m = \text{slope} = -2$ and $(x_1, y_1) = (1, -2)$. So we get

   $$y - (-2) = -2(x - 1)$$

   or

   $$y + 2 = -2x + 2$$

   or

   $$y = -2x$$

2. Find an equation of the line passing the point $(2, 1)$ that is parallel to the line $2y = x - 1$.

   Use the point-slope form a line

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

   where $(x_1, y_1) = (2, 1)$, and $m = \text{slope}$. Since our line is *parallel* to the line $2y = x - 1$, our line will have the *same* slope. The slope of the line $2y = x - 1$ is $\frac{1}{2}$, so our slope is $m = \frac{1}{2}$. So our equation is

   $$\begin{aligned} y - 1 = \frac{1}{2}(x - 2) \quad &\Longrightarrow \quad 2(y - 1) = (x - 2) \\ &\Longrightarrow \quad 2y - 2 = x - 2 \\ &\Longrightarrow \quad 2y = x \end{aligned}$$