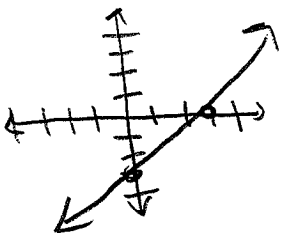
Section 3.3 and 3.4
6-27-12

Group Members_____

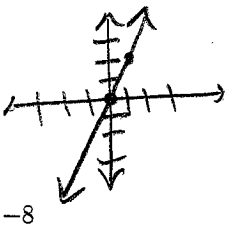
NOTE: some of these exercises are borrowed from Beginning Algebra by Elayn Martin-Gay.

1. Graph the following by finding and plotting the intercepts:

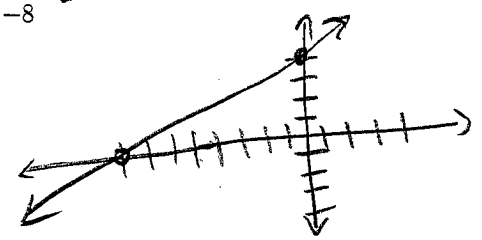
   (a) $x - y = 3$



   (b) $y = 2x$



   (c) $x - 2y = -8$



2. Find the slope of the line that passes through the given points

   (a) $(-1, 5)$ and $(6, -2)$

   $m = -1$

   (b) $(-4, 3)$ and $(-4, 5)$

   $m = \text{undefined}$

   (c) $(0, 13)$ and $(-4, 13)$

   $m = 0$

3. Find the slope of the following lines:

   (a) $y = 5x - 2$

   $m = 5$

   (b) $3x - 5y = 1$

   $m = \frac{3}{5}$

(c) $y = -2$

$m = 0$

(d) $2x - 3y = 10$

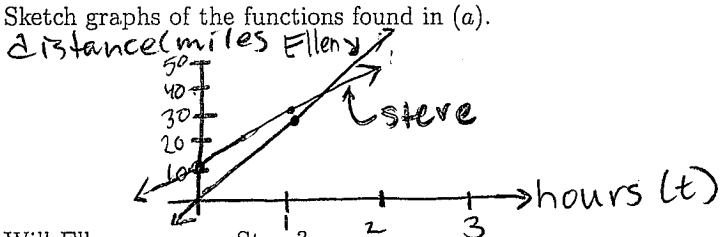
$m = \frac{2}{3}$

4. Steve and Ellen have entered a downhill mountain bike race. Steve and Ellen start the race at the same time; however, Steve starts 10 miles ahead of Ellen. Steve's average speed is $22mph$ and Ellen's is $30mph$. Answer the following:

   (a) Write expressions for the distance traveled by Steve and Ellen as a function of time.

   Steve: $22t + 10$ Ellen: $30t$

   (b) Sketch graphs of the functions found in (a).



   (c) Will Ellen ever pass Steve?

   Yes

   (d) If Ellen will pass Steve, how long into the race will she pass him?

   $t = \frac{5}{4}$ hours

   (e) If Ellen's speed is $22mph$, will she pass Steve?

   No.

5. Find the slope of a line that is (1) parallel to and (2) perpendicular to the line through the following points:

   (a) $(-3, -3)$ and $(0, 0)$

   Parallel: 1 Perpendicular: -1

   (b) $(6, -2)$ and $(1, 4)$

   Parallel: $-\frac{6}{5}$ Perpendicular: $\frac{5}{6}$

   (c) $(-8, -4)$ and $(3, 5)$

   Parallel: $\frac{9}{11}$ Perpendicular: $-\frac{11}{9}$