

Name: _____

Heatherwood Mathletes
Home Exercises: Blue Belt
January 27, 2005

- Plot the following lines on a sheet of graph paper.
 - $y = x$.
 - $y = 2x$.
 - $y = x/2$.
- What is the slope of each of the lines you plotted in question #1?
- Find the x -intercept and the y -intercept of each of the following lines.
 - $y = x + 1$.
 - $y = 2x + 1$.
 - $y = x - 1$.
- Graph each of the lines in question #3 on a sheet of graph paper (if you have not already done so) and check to see if you found the intercepts correctly.
- Write an equation for the lines with the following properties.
 - y -intercept of 1, slope of 3.
 - y -intercept of 2, slope of 1.
 - y -intercept of -1, slope of 2.
 - y -intercept of -2, slope of $1/2$.
- Graph the following two lines on a sheet of graph paper.

$$y = x + 1$$

$$y = 2x - 1$$

(a) What is the coordinate (in other words the (x, y) value) of the point where the lines cross?

(b) Show that these equations can be rearranged as

$$x - y = -1$$

$$2x - y = 1$$

(c) Solve these two equations algebraically for x and y (by the methods we developed for simultaneous equations). Do you get the same result that you did using the graph? (You should.)