

You MUST use good notation and show appropriate work.

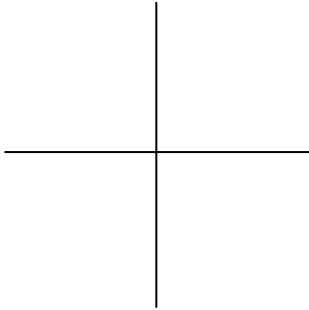
Math 102

Name _____

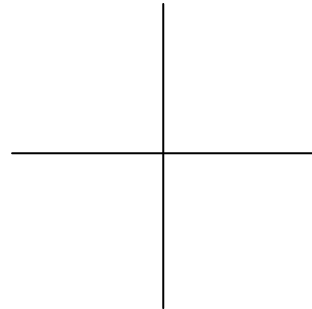
Sections 7.1 and 7.2 Linear Equations and Linear Modeling

1. Determine and label the intercepts and sketch the graphs of each of the following linear equations.

a) $2x + 3y = 6$



b) $3x - 4y = 12$



2. In each calculate the slope of the line passing through the two given points.

a) $(2, 5)$ and $(4, 11)$

b) $(-2, 1)$ and $(3, -8)$

c) $(1, 4)$ and $(-3, 8)$

3. In each determine an equation of a line in slope-intercept form which

a) has slope 4 and y-intercept -6 .

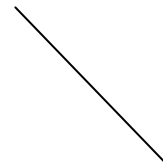
b) has slope -2 and y-intercept 5.

c) has slope 5 and passes through the point $(-1, 3)$.

d) has slope -3 and passes through the point $(2, 4)$

e) has slope 2 and passes through the origin.

4. Estimate the slope of each of the following. (Assume the same scale on both axes.)



(a) _____ (b) _____ (c) _____ (d) _____

5. (a) Write an equation for a line in slope-intercept form which passes through the points $(2, 5)$ and $(4, 11)$.

(b) Is the point $(-1, -4)$ on the line you found in part (a)? Explain.

6. A certain college currently has 4000 students enrolled. It plans to increase its enrollment, x , by 200 students per year during each of the next 15 years.

(a) Write down a linear equation in x and y which describes this situation. Assume x represents the number of years from now.

a) _____

(b) How many students will be enrolled at this college ten years from now?

b) _____

7. Assume at a certain college the yearly tuition, y , is \$6000. If tuition increases by \$400 per year, write a linear equation in x and y which relates the tuition to the number of years, x , from the present.

8. Assume a student is required to complete 128 credits in order to graduate. Furthermore, this student will complete 16 credits every semester. Write an equation which relates y , the number of credits *still needed* to x , the number of semesters completed.
