HOMEWORK 1 - MATH 111
DUE DATE: Wednesday, September 7
INSTRUCTOR: George Voutsadakis

Read each problem very carefully before starting to solve it. Each question is worth 1 point. It is necessary to show your work. Correct answers without explanations are worth 0 points.

GOOD LUCK!!

1. Write an equation for the line that

   (a) has slope -5 and cuts the y-axis at 8.
   (b) passes through the point $(2, -5)$ and has slope -3.
   (c) passes through the points $(3, 8)$ and $(-5, 0)$.

2. Solve the following equations for x:

   (a) $36 = 5x - 4$
   (b) $3x + 5y = 90$ if $y = 6$.

3. $\mathfrak{G}eorge^{\circledR}$ Electronics sold 50 portable tape players per month at a price of $40 each, but when they raised the price to $45, the sales went down to 40 players per month.

   (a) Write down an equation to describe the number of players sold in relation to the price charged.
   (b) If they want to sell 60 players per month, what price should they charge?

4. Write an equation for the line with slope -2 and x-intercept 8. Then sketch its graph.

5. Transform the equation of the line $\frac{y-200}{x-10} = -5$ into slope-intercept form.

6. Write a conditional equation for y using the following information and then graph that equation: y is linearly related to x piecewise and forms a continuous line. It has a vertical intercept of 10. Its slope is $\frac{3}{2}$ for values of x up to 50, but for values of x above 50 the slope is $\frac{5}{2}$.

7. How high can the fixed costs of a firm be, if the firm must be able to break even on the sale of 4,000 units per month at a price of $1.25, and the incremental cost of production is $0.85?

8. The rent on a magazine kiosk is $225 per month, and the kiosk is open 6 days per week. Suppose that the selling price of each magazine is $2.50 and the wholesale cost of a magazine when purchased by the retailer is $1.00. If the kiosk owner needs to make a profit of $1,200 per month, how many magazines must he sell each month?