

HOMEWORK 2 - MATH 140

DUE DATE: Monday, September 13

INSTRUCTOR: George Voutsadakis

Read each problem very carefully before starting to solve it. One part of each homework problem will be chosen at random and graded. Each question is worth 1 point. It is necessary to show your work. Correct answers without explanations are worth 0 points.

GOOD LUCK!!

- Graph the function $f(x) = -2x + 5$ using
 - the x - and the y -intercepts.
 - the slope and the y -intercept.
- Suppose that the quantity supplied S and the quantity demanded D of hot dogs at a baseball game are given by the following functions $S(p) = -2000 + 3000p$ and $D(p) = 10,000 - 1000p$, where p is the price. The **equilibrium price** of a market is defined as the price at which the quantity supplied equals the quantity demanded. Find the equilibrium price and the equilibrium supply for the hot dogs.
- Determine the equation of the line with slope -3 going through the point $(-1, 1)$.
- Determine the equation of the line going through the points $(-3, 1)$ and $(2, 5)$.
- Determine the equation of the line that is perpendicular to the line containing the points $(-3, 4)$ and $(2, 1)$ and goes through the point $(-1, -1)$.
- The perimeter of a rectangle is 42 meters. Find its length and width if the length is twice the width.
- Michigan apples costing \$2.50 per pound are to be mixed with premium California oranges costing \$4.00 per pound to produce a 5 lb mixed fruit bag. How much should the weight of the apples be if the bag is to be sold for \$15.00?
- How much water must be evaporated from 240 gallons of a 3% salt solution to produce a 5% salt solution?