

## HOMEWORK 2 - MATH 140

DUE DATE: Monday, September 12

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!!

1. Find the equation of the line passing through the points  $(4, 2)$  and  $(-5, -16)$ .
2. Find the equation of the line that is
  - (a) parallel to the line  $y = -3x + 5$  and passes through the point  $(-1, 2)$ ;
  - (b) perpendicular to the line  $y = 2x - 3$  and passes through the point  $(5, -2)$ .
3. Find the intercepts and then graph the line with equation  $3x + 2y = 12$ .
4. A total of \$ 10,000 is to be divided between Sean and George, with George to receive \$ 3,000 more than Sean. How much will each receive? (Do not guess! Show work!)
5. Jessica is paid time-and-a-half for hours worked in excess of 40 hours and double-time for hours worked on Sunday. If Jessica had gross weekly wages of \$ 342 for working 50 hours, 4 of which were on a Sunday, what is her regular hourly rate?
6. The perimeter of a rectangle is 24 feet. If its length is 3 feet longer than twice its width, find the dimensions of the rectangle.
7. Mark, a loan officer, has \$100,000 to lend and is required to obtain an average return of 9% per year. If he can lend at a rate of 12 % or at the rate of 5%, how much can he lend at 5% and still meet his requirement?
8. How much water must be evaporated from 240 gallons of a 3% salt solution to produce a 5% salt solution?