

## EXAM 1 - MATH 111

DUE DATE: Friday, January 30

INSTRUCTOR: George Voutsadakis

Read each problem very carefully before starting to solve it. Each question is worth 3 points. It is necessary to show your work. Correct answers without explanations are worth 0 points.

GOOD LUCK!!

1. Find the equation of the line that is perpendicular to the line passing through  $(-2, -5)$  and  $(3, 10)$  and goes through the point  $(8, -16)$ .
2. Find the intercepts and then graph the equation  $4x - 6y = 24$ .
3. Use the quadratic formula to obtain the solutions of  $2x^2 - 7x + 3 = 0$ .
4. A small company that produces chocolate cookies has found that its operating cost in dollars is  $C = 20x + 345$  and its revenue in dollars is  $R = 35x$ , where  $x$  is measured in boxes of cookies and the cost and revenue is in dollars. How many boxes of cookies have to be produced to break even? What is the break-even revenue?
5. Solve the inequality and then graph the solution of  $|2x - 7| - 14 \leq -5$ .
6. Solve the inequality and graph the solutions of  $\frac{-x-3}{x^2+3x-10} \geq 0$ .