

## HOMEWORK 2 - MATH 111

DUE DATE: Monday, January 26

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. Use factoring to solve the equation  $x^2 - 7x - 18 = 0$ .
2. Use the quadratic formula to solve the equation  $5x^2 - 3x - 2 = 0$ .
3. A company that produces breakfast cereal has found that its operating cost in dollars is  $C = 10x + 240$  and its revenue in dollars is  $R = 44x - x^2$ . For what values of  $x$  will the company break even?
4. Solve the following inequality and then graph the solution:  $3p - (5 - 2p) \leq -9p - 4$ .
5. Solve and then graph the solution of  $|2x - \frac{2}{3}| > 8$ .
6. Solve and then graph the solution of the following inequality  $x^2 - 7x < -10$ .
7. Solve and then graph the solution of  $x^3 - 49x \geq 0$ .
8. Solve and then graph the solution of  $\frac{x^2-4}{x-5} \leq 0$ .