

HOMEWORK 3 - MATH 111

DUE DATE: Friday, February 14

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. The Revenue R in terms of the number of items produced is given by $R(x) = 10x$ and the cost C by $C(x) = 5x + 65$. Find the break-even point and the break-even price.
2. The supply S and the demand D in terms of the number of items q are given by $S(q) = \frac{1}{3}q + 4$ and $D(q) = -q + 24$, respectively. Find the equilibrium demand and the equilibrium price.
3. Find the number of solutions of $3x^2 - 6x + 2 = 0$.
4. Use the quadratic formula to solve $10x^2 + x - 2 = 0$.
5. Solve the inequality $x^2 - 8x + 15 \geq 3$.
6. Solve the inequality $\frac{x+5}{x-7} \leq 0$.
7. Find the domain of $f(x) = |2x - 7|$.
8. Find the domain of $g(x) = \sqrt{\frac{x^2-4x+4}{x^2+2x-3}}$.