

EXAM 1 - MATH 111

Wednesday, February 5, 2003

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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 parallel to $3x + 5y = 21$ and passes through the point $(3, -4)$.
2. Find the equation of the line that is perpendicular to the line $y = 5x + 2003$ and passes through the point $(-10, 8)$.
3. The cost C in terms of the number of items x produced is given by $C(x) = 3x + 120$ and the revenue by $R(x) = 7x$. Find the range of values of x for which the company will at least break even and the revenue, when the company breaks even.
4. The demand price p of an item in terms of the quantity q is given by $p = -q^2 + 3600$ and the supply price p in term of the quantity q by $p = 50q$. Determine the equilibrium price and the equilibrium supply.
5. Solve the inequality $|x - 7| - 1 \leq 20$.
6. Find the domain of $f(x) = \sqrt{\frac{-x+1}{x+2}}$.