

EXAM 1 - MATH 111

Wednesday, September 24, 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 perpendicular to $2x - 7y = 21$ and passes through the point $(-2, 7)$.
2. Find the equation of the line that goes through the points $(-4, 3)$ and $(5, 27)$.
3. The cost C in terms of the number of items x produced is given by $C(x) = 7x + 36$ and the revenue by $R(x) = 9x$. 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 $p = -q^2 + 120$ and the supply price p in term of the quantity q by $p = 10q$. Determine the equilibrium price and the equilibrium supply.
5. Solve the inequality $|2x - \frac{7}{3}| - 8 \leq 15$.
6. Find the domain of $f(x) = \sqrt{\frac{x-3}{-x+7}}$.