QUIZ 2 - MATH 112 Friday, January 28

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Read each problem **very carefully** before starting to solve it. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [7 points] Suppose that a certain manufacturer has fixed costs \$1,000 and that it costs \$20 to produce each item. Suppose, also, that the revenue from selling x items is $R(x) = -x^2 + 90x$.

   (a) Write an equation for the cost function.

   $C(x) =$

   (b) Write an equation for the profit function.

   $P(x) =$

   (c) At which production level(s) x does the company break even?

   (d) How many items should be produced to maximize the company's profit?

2. [3 points] Find the domain of $f(x) = \dfrac{x+7}{3x^3+24x^2-60x}$.