Quiz #1

Math 116-2K

Wednesday, January 5, 2000

1. The value of an investment is given by $y = \$300(1.08)^x$, where x is the number of years into the investment. Find how many years have to elapse before the investment is worth \$450.00.

2. The cost of manufacturing an item is given by $C(x) = 3.045x + 7.23$, where x is the number of items in thousands and $C(x)$ is the total cost in thousands of dollars. The item is sold for 4.99 per item, and the revenue is $R(x) = 4.99x$.

   Given that profit is $P(x) = R(x) - C(x)$, find the break-even point, i.e., solve for the number of items needing to be sold for the profit to be \$0.

3. A ream of paper costs \$2.95 and a legal pad costs \$0.95. Create a model for the cost of buying r reams of paper and p legal pads.

4. Find y given that $x = 0.34$:

$$y = \frac{90}{1 + 5e^{-4x}}$$

5. Find the x where $y = 100$: