Math 220 Sec 04 Quiz 1 Fall 2016 Key

1. The cost of manufacturing an additional unit of a commodity is called marginal cost

2. In linear cost function $C(x) = 55x + 700$, $55x$ gives the variable cost and 700 the fixed cost

Express a revenue function $R(x)$ for an item that sells for \$200 $R(x) = 200x$

Write the profit function $P(x)$ that represents the production and sales of the two functions above.

$P(x) = R(x) - C(x) = 200x - (55x + 700)$

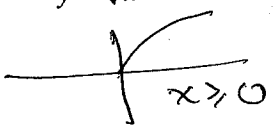
$P(x) = 145x - 700$

How many units must be sold in order to break even for the profit function you found?

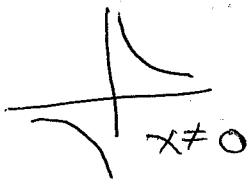
$P(x) = 0 = 145x - 700 \rightarrow x = \frac{700}{145} \approx 5$ units

3. Sketch the following functions and state their domains:

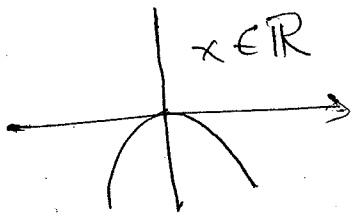
$y = \sqrt{x}$



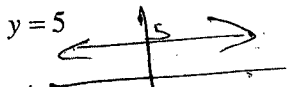
$y = \frac{1}{x}$



$y = -x^2$

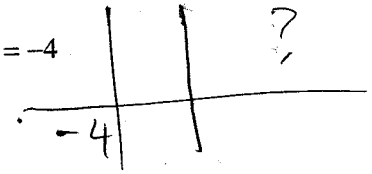


$y = 5$

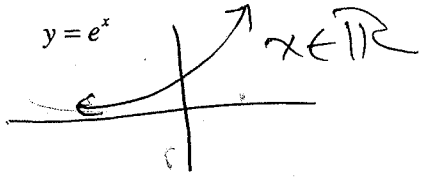


for all $x \in \mathbb{R}$

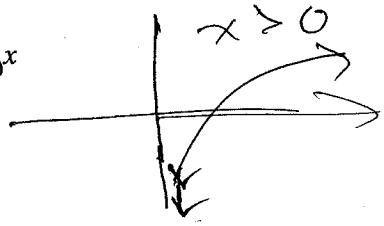
$x = -4$



$y = e^x$



$y = \log_2 x$



4. $\log 10^3 = ? = 3$

Common $10^? = 10^3$

$\log_2 32 = 5$

$2^? = 32$

$\log_{10} x = -1 \quad 10^{-1} = \frac{1}{10}$

$\log_b b = 1$

$\ln 5e = \ln 5 + \ln e$

$(\ln 5) + 1$

$\log_7 1 = 0$