Mathematics 122

Quiz #11 Name: Key

You must show your work to get full credit.

1. Here the graph of a revenue function.

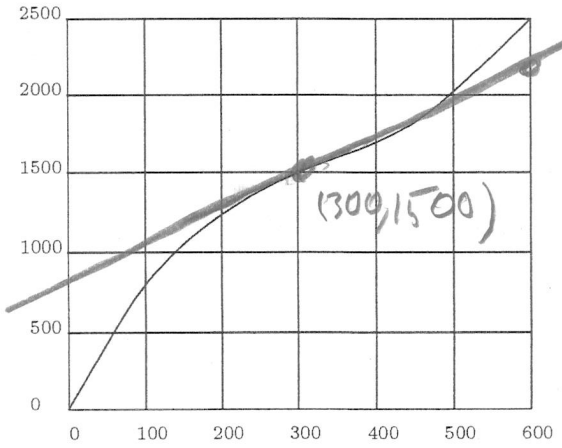

FIGURE 1. This is the graph of the revenue, $R(q)$, produced by selling q copies of a mathematics 122 answer booklet.

(a) Draw the tangent line to this graph where $q = 300$ and label, on the graph and showing both the x and y coordinates, two points on this tangent line.

(b) Using your points estimate the marginal revenue $MR(300)$.

$MR(300) = R'(300)$

$= \frac{\Delta R}{\Delta q} = \frac{2200 - 1500}{600 - 300} = 2.3333...$

$MR(300) \approx$ 2.3333...

2. If the $C(q)$ is the cost, in dollars, function of producing q gallons of beer and $C(100) = 242$ and $MC(100) = 1.5$

(a) What are the units of $MC(100)$? Units are: dollars / (gallon of beer)

(b) Estimate the following

$C(103) \approx 242 + 3(1.5)$

$= 246.5$

$C(103) \approx$ 246.5

$C(98) \approx 242 - 2(1.5)$

$= 239$

$C(98) \approx$ 239