

42] If the total revenue function for a blender is:

$$R(x) = 36x - 0.01x^2$$

where x is the number of units, what is the average rate of change in $R(x)$ as x increases from 10 to 20 units.

$$\begin{aligned} \text{average rate of change} &= \frac{R(20) - R(10)}{20 - 10} \\ &= \frac{716 - 359}{10} \\ &= \frac{357}{10} = 35.7 \end{aligned}$$

45] The revenue function for a sound system is

$$R(x) = 300x - x^2$$

(a) What is the function that gives marginal revenue?

$$MR = R'(x)$$

$$= 300 - 2x$$

(b) What is the marginal revenue if 50 units are sold, and what does it mean?

$$R'(50) = 300 - 2(50)$$

$$= 300 - 100$$

$$= \underline{200} \text{ } \$$$

the ~~expected~~ ^{change in} revenue from the ~~selling~~ ^{the 51st} ~~unit~~ ^{units} is approximately \$200