

Name: _____

Date: _____

ACTIVITY 4: Profit, profit, profit... for all! Answer Key

1. When does profit maximization occur? What does that look like for this company?

Marginal Cost = Marginal Revenue

$$0.000009x^2 - 0.08x + 200 = -0.04x + 300$$

2. How much of this item should this company produce?

$X = 6228$. Students can solve this using a Graphing Calculator or using calculus.

3. What is the profit function $P(x)$ for this particular company?

$$P(x) = R(x) - C(x)$$

$$P(x) = -0.02x^2 + 300x - 0.000003x^3 - 0.04x^2 + 200x + 70,000$$

4. What is the maximum profit this company can make according to your findings?

$$P(6228) = \$603,844$$

5. Select any other level of output than what you found in number 4 and verify that it produces a smaller profit (or greater loss) than what we found using calculus.

Answers may vary.