

Name: _____

Grade: _____

Group Members Present:

_____, _____, & _____

1. A certain manufacturer makes widgets. The profit to the manufacturer from making widgets is $P(x)$ dollars where x is the number of widgets produced.

a. Given $P(202) = \$10$. If $P'(202) = -12$, give some advice to the widget manufacturer.

b. What is the marginal profit when 202 widgets are produced?

2. A golf ball manufacturer knows that the cost associated with various hourly production levels are as shown in the table to the right.

a. Write a model for the data.

Balls produced (hundreds)	Production Cost (dollars)
2	248
5	356
8	432
11	499
14	532
17	567
20	625

b. Calculate and interpret the marginal cost to produce 1000 balls each hour and to produce 2100 golf balls each hour.

c. Convert the model to one for average cost per ball.

d. Calculate the rate of change of the average cost per ball at production levels of 300 golf balls produced each hour and at 1700 golf balls produced each hour.