

NAME: _____

DATE: 10/30/2017

ASSIGNMENT: Calculus in Business

DIRECTIONS: Whenever you see the word “maximize” or “minimize” in business, please take the derivative and set that derivative equal to zero. Why? Maxima and minima are points where tangent lines have a gradient of zero.

1.) The business functions for the snack food manufacturing business are:

Revenue: $R(x) = 700x - 0.5x^2$

Cost: $C(x) = 800 + 0.3x^2$

“x” represents a pallet of chips

a.) Find the profit function, $p(x)$: *[2 marks]*

b.) Find the number of pallets of chips that maximize the profit: *[2 marks]*

c.) At what price per pallet of chips will the profit be maximized? *[2 marks]*

d.) What are the coordinates for the point of inflection on this profit function?

[2 marks]

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Answer key (show all calculations to receive full marks)

1.)

a.) Subtract the Revenue and Cost functions (remember to distribute the negative)

b.) 438 boxes

c.) \$481

d.) tutorials