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## Graded Assignment 1 - Andy's Italian Coffee (cont')

### Part 1: The profit maximizing Espresso price

1/1 point (graded)

Recall Andy's coffee shop from Week 1. We identified the profit from Andy's coffee shop, assuming that he only sells Espresso. Andy did further refinement of his cost estimates and came up with the following profit function:

$$3203.71 * p - 1177 * p^2 - 883.59.$$

Calculate the price that Andy should set to maximize his profit.  
Round your result to one decimal.



You have used 1 of 2 attempts

✓ Correct (1/1 point)

### Part 2: Influencing the optimal Espresso price

3/3 points (graded)

To develop the profit function above, Andy assumed that the formula  $209 + 0.23 * x$  appropriately captures his cost to make Espresso and the demand can be expressed by  $x = 2933 - 1177 * p$ . In the demand formula, -1177 is the slope of the linear demand function; it indicates how sensitive customers react to a change in price. Andy wonders how a change in the customers sensitivity influences his optimal price.

Develop a formula for the optimal price, where the price sensitivity is expressed by  $S$ . Write in the answer field, the right hand side of the equation, where the left hand side is the optimal price  $p$ .

Hint: Formulate the profit function using  $x = 2933 - S * p$  and then find a function for the optimal price depending on  $S$ .

Input only the right-hand side of the equation, e.g.  $3500 + 25 / S$

0.115+1466.5/S



$0.115 + \frac{1466.5}{S}$

Differentiate the optimal price with respect to the sensitivity parameter  $S$  to see how a unit change in the sensitivity influences the price.

Input only the right-hand side of the equation, e.g.  $3500 + 25 / S$

-1466.5/S^2



$-\frac{1466.5}{S^2}$

Submit

You have used 1 of 2 attempts

✓ Correct (3/3 points)

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