One-Variable Optimization Example.

 An automobile manufacturer makes a profit of $1500 on the sale of a certain automobile. It is estimated that for every $100 of rebate, sales increase by 15%.

1. What amount of rebate will maximize profit?

2. Compute the sensitivity of the result to the 15% assumption.

3. Suppose that rebates actually generate only a 10% increase in sales per $100. What is the effect? What if the response is somewhere between 10% and 15% per $100 of rebate?

4. Under what circumstances would a rebate offer cause a reduction in profit?

Description of Variables and Constants.

Assumptions.

Objective.

Formulate the Model.

Solve the Model.

Answer the Question.

Sensitivity Analysis.