

Problem Set 2

Managerial interpretation of Solver's sensitivity analysis.

Problem 1

Use Solver to create a Sensitivity Report for Problem 2 (Product Mix) of Problem Set 1. Exploit the information within this report to answer the following questions:

- a) By how much would the developer's monthly rental income increase if the zoning board allowed the developer to build five more units in the complex?
- b) If the developer built one efficiency unit, what effect would this have on the total rental income?

Problem 2

Use Solver to generate a Sensitivity Report for Problem 3 (Logistics) of Problem Set 1. Exploit the information within this report to answer the following questions:

- a) The manager of Restaurant A is willing to buy more bottles at a 10% discount on additional bottles purchased. Is that acceptable to the wine producer?
- b) How much would the winery be prepared to invest to boost the productivity of Vineyard 1 by 10%? by 20%?
- c) The manager of Restaurant C threatens to cut back on their order of 1250 bottles. How much of a discount could be offered on the bottles they plan to cancel as an incentive to maintain their initial order?
- d) The sommelier of Restaurant A would like some of their bottles to be from Vineyard 2. How much extra should the wine producer charge for this?

Problem 3

Use Solver to generate a Sensitivity Report for Problem 5 (Scheduling) of Problem Set 1. Exploit the information within this report to answer the following questions:

- a) What is the maximum number of surplus workers available at any time during the day?
- b) Some employees have asked the maintenance supervisor if it was possible to change to another shift. Will the supervisor be able to propose alternative working schedules for them to consider, without increasing the total number of employees needed? Explain.
- c) A more efficient packaging of work tasks is under consideration so that only 200 workers would be needed from 8am to 12pm with no changes anywhere else. How many employees would this save on the total staff? Explain.