

For the Integer Programming problem

$$x = [1, 2, 2, 0, 0, 1] \quad \text{and max yield} = 162250$$

For the linear programming problem

$$x = \left[\begin{array}{l} \text{6-element vector (float)} \\ 0.138888888888889026 \\ 0.0 \\ 4.8611111111111112 \\ 0.99999999999999934 \\ 0.0 \\ 0.0 \end{array} \right] \quad \text{and max yield} = 162500.$$

↑ didn't lose much yield

Quiz 3: Sensitivity... by implicit differentiation...

$$S(t, M) = 0.4329428182079427$$

$$S(P, M) = 1.0409877023336132$$

approx by setting $M=801$ and rerunning the model.

$$S(t, M) = 0.43234877366143437$$

$$S(P, M) = 1.040998778405237$$

Idea: Do things in two different ways to check that the answers are the same or similar.

Chapter 4

INTRODUCTION TO DYNAMIC MODELS

Example 4.1. In an unmanaged tract of forest area, hardwood and softwood trees compete for the available land and water. The more desirable hardwood trees grow more slowly, but are more durable and produce more valuable timber. Softwood trees compete with the hardwoods by growing rapidly and consuming the available water and soil nutrients. Hardwoods compete by growing taller than the softwoods can and shading new seedlings. They are also more resistant to disease. Can these two types of trees coexist on one tract of forest land indefinitely, or will one type of tree drive the other to extinction?