22. Solve the linear programming model developed in problem 20 for the Burger Doodle restaurant by using the computer.   
  
a. Identify and explain the shadow prices for each of the resource constraints.   
b. Which of the resources constrain profit the most?   
c. Identify the sensitivity ranges for the profit of a sausage biscuit and the amount of sausage available. Explain these sensitivity ranges.

**22.**

*Z* = 230.000

Variable Value

*x*1 300.000

*x*2 100.000

Constraint Slack/Surplus Shadow Price

*c*1 0.000 1.000

*c*2 15.000 0.000

*c*3 0.000 12.500

*c*4 0.600 0.000

22. Solve the linear programming model developed in problem 20 for the Burger Doodle restaurant by using the computer.

X1 = 300 and X2 = 100

a. Identify and explain the shadow prices for each of the resource constraints.

Shadow Prices for the resource constraint:

R1 = 0 R2 = 1 R3 = 0 and R4 = 12.50

b. Which of the resources constrain profit the most?

Flour is the most profitable resource constraint.

c. Identify the sensitivity ranges for the profit of a sausage biscuit and the amount of sausage available. Explain these sensitivity ranges.

The profit of the sausage ranges from 0.50 to infinity. The amount of sausage available ranges from 5.0 to infinity. The amount of Sausage available will decide the profit per sausage.