**Homework Chapter IV**

1. Write the dual of

Max 4 x1+ 2x2 – x3 – 4 x4 + 2 x5

s.t. 3 x1 + x2 – x3 – x4 + x5 < 12

x1 + x2 + x3 < 2

x1 , x2 , x3, x4, x5 > 0

Explain the effect of the variables x3, x4 and x5 on the solution

2. Write and solve the dual of the farmer Brasos model from the chapter 3 homework

Contrast the solution information (variable values, slacks, shadow prices, objective value, reduced costs for your earlier primal solution with the dual solution

3. Demonstrate complementary slackness holds in wither the primal or dual solution to problem 2

4. Explain the statement *all profits are allocated to resources* in the context of

The primal solution to problem 2.