Homework Set 1

Productivity

Problem 1: (10 points)
Mance Fraily, the Production Manager at Ralts Mills, can currently expect his operation to produce 1000 square yards of fabric for each ton of raw cotton. Each ton of raw cotton requires 5 labor hours to process. He believes that he can buy a better quality raw cotton, which will enable him to produce 1200 square yards per ton of raw cotton with the same labor hours.

What will be the impact on productivity (measured in square yards per labor-hour) if he purchases the higher quality raw cotton? Show (a) current productivity, (b) new productivity, and (c) the percent change.

Problem 2: (10 points)
C. A. Ratchet, the local auto mechanic, finds that it usually takes him 2 hours to diagnose and fix a typical problem. What is his daily productivity (assume an 8 hour day)?

Mr. Ratchet believes he can purchase a small computer trouble-shooting device, which will allow him to find and fix a problem in the incredible (at least to his customers!) time of 1 hour. He will, however, have to spend one extra hour each morning adjusting the computerized diagnostic device. What will be the impact on his productivity (measured in problems per day) if he purchases the device? Show (a) current productivity, (b) new productivity, and (c) the percent change.

Problem 3: (10 points)
Joanna French is currently working a total of 12 hours per day to produce 240 dolls. She thinks that by changing the paint used for the facial features and fingernails that she can increase her rate to 360 dolls per day. Total material cost for each doll is approximately $3.50; she has to invest $20 in the necessary supplies (expendables) per day; energy costs are assumed to be only $4.00 per day; and she values her time at $10 per hour for her work. Viewing this from a total (multifactor) productivity perspective, what is her productivity (dolls per dollar) at present and with the new paint? Show her (a) current productivity, (b) new productivity, and (c) the percent change.

Project Management

Problem 4: (25 points) Problem 3.7 at the end of Chapter 3 in your text.
Problem 5: (25 points) Problem 3.17 at the end of Chapter 3 in your text.
Problem 6: (20 points) Problem 3.19 at the end of Chapter 3 in your text.