**Jafes Veras**

**TCET 4140**

**11/4/2013**

**Network Management**

**3-9.** Prepare a composite (weighted) index for housing construction costs in 2008, using the following data:





Weighted index= 2704.67

**3-16.** Four hundred pounds of copper go into a 2,000- square-foot, newly constructed house. Today’s price of copper is $3.50 per pound. If the cost of copper is expected to increase 4.5% per year into the foreseeable future, what is the cost of copper going to be in a new 2,400 square foot house 10 years from now. Assume the cost capacity factor for increases of copper in houses equals 1.0.

Price of 2,000 square feet= (400 pounds\* $3.50 pre pund) = $1,400

Inflation for 10 years = 4.5%\*10= 45%

=$3.50\*45%=$ 1.575+3.50= **$5.08 cost of copper**

400punds/20=20 40\*4=80

2,400 square foot has 480 pounds of copper =480\*$5.08= **$2438.40** cost of copper for 2,400 square foot

**3-17.** The structural engineering design section within the engineering department of a regional electrical utility corporation has developed several standard designs for a group of similar transmission line towers. The detailed design for each tower is based on one of the standard designs. A transmission line project involving 50 towers has been approved. The estimated number of engineering hours needed to accomplish the first detailed tower design is 126. Assuming a 95% learning curve,

**a.** What is your estimate of the number of engineering hours needed to design the eighth tower and to design the last tower in the project?

Z8=126(8^(log 0.95/log2))= 108.03 engineering hours

**b.** What is your estimate of the cumulative average hours required for the first five designs? (3.4)

T5= =126(4.66214) = 587.43

**3-19.** In a learning curve application, 846.2 work hours are required for the third production unit and 783.0 work-hours are required for the fifth production unit. Determine the value of *n* (and therefore *s*) in Equation (3-5).