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TCET 4140

11/14/13

Homework 4





K = Reference year (previous year)

N = Future year

Ik = reference year index

I2008 = =

 = 153.3

I2008 = 153.3



Inflation in 10 years = 10\*(0.045) = 45% increase

Future Price per pound = [($3.50 \*0.45) + $3.50] = $5.075 per pound

Pounds needed for 2,400 square feet = 400lbs [ ] = 480lbs

**Cost of copper in 10 years for a 2,400 square foot house** = 480 lbs \* $5.075 = $2436

**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?**



**K** = 126

**U** = 8 then 50

**Learning Curve** = **Log s** = 0.95

Z8=126 (8^())= 108.03 engineering hours

Z50=126 (50^( ))= 94.33 Engineering hours

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



T5=

126(1-0.074+2-0.074+3-0.074+4-0.074+5-0.074) = 587.43 hours



Zu = K ()

n= Log(s)/ Log(n)

Zu= 846.2 – 783= 63.2