

HW#5 442

1.

1a. 4,000 cases

1b. $A_{Apr} = 4,000$ and $x_{May} = 4,500$.After May Prediction for Any Future Month = $A_{May} = 0.2(4,500) + 0.8(4,000) = 4,100$.After June Prediction for Any Future Month = $A_{Jun} = 0.2(3,500) + 0.8(4,100) = 3,980$

1c. Simple exponential smoothing gives the most weight to the most recent observation. Thus even though the demand since beginning of May has averaged 4,000 cases, our forecast decreases because the June observation is given more weight than the May observation, and June demand was less than May demand.

2.

8. New L = $.3(30) + .7(50 + 6) = 48.2$ New T = $.3(-1.8) + .7(6) = 3.7$.
Forecast = $48.2 + 3(3.7) = 59.3$

3.

(a) $\beta_1 = 140/20 = 7$ and $\beta_0 = 32 - 7 \cdot 4 = 4$
 $y = 4 + 7x$ (b) $SSE = 14$ and $SST = 994$. So $R^2 = 1 - 14/994 = 0.986$ (c) $SSE = 98$ and $SST = 994$. So $R^2 = 1 - 98/994 = 0.901$ (d) b is better than c because of higher R^2 .