Problem 2

Tuesday, January 23, 2024 6:58 PM

- Worker Rate = $25.5/hr
- Cost Start Part = $.18/hr

$T_o = 26\,sec$

$T_h = 5\,sec$

$T_{h'} = 2\,sec$

$T_c = 33\,sec$

a.) $T_c = T_p$ bc $T_{su} = 0$ & $Q = 1$

$T_p = .55\,min$

So, $R_p = \frac{60}{\frac{33}{60}} = \frac{60^2}{T_p\,(sec)}$

$\frac{\$}{hr} \cdot \frac{1\,hr}{60\,min}$

$$R_p = 109.091 \frac{pc}{hr}$$

$$C_{pc} = .18 \frac{usd}{pc} + \begin{pmatrix} 25.5 \\ + \\ 16.50 \end{pmatrix} \left(\frac{11}{20}\right) + 0$$

$$C_{pc} = .565\ \$/pc$$

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b.)

$T_p = 31$ Seconds $\quad C_t = \$8{,}000/yr$

$C_m = .18\ \$/pc$

$C_L = \frac{1}{5}(25.5) = 5.1\ \$/hr$

$$8000\ \frac{USD}{year} \cdot \frac{1\ year}{365\ Days} \cdot \frac{1\ Day}{24 hrs} \cdot \frac{1 hr}{60 min} = .0152\ USD/min$$

$$C_{pc} = .18\ \$/pc + (5.1 + 16.5)\left(\frac{1}{60}\right)\left(\frac{31}{60}\right) + (.0152)\left(\frac{31}{60}\right)$$

$$C_{pc} = .3739\ \$/pc \qquad R_p = \frac{60}{}$$

c.)

$$T_p = \frac{31}{60} min \cdot \frac{1hr}{60min} \cdot \frac{1\ Day}{24hrs} = 3.587963e\text{-}4\ Day/pc$$

$$4 \cdot 10^4 = |C_{mpc} - C_{apc}|\ (t_?) \qquad R_p\ \frac{pc}{hr} \cdot \frac{24hrs}{1\ Day}$$

$4.10 = |C_{mpc} - C_{apc}| (t_?)$ $\frac{1\ hr}{1\ Day}$

$[\$] = |[\$/pc]|[\frac{pc}{hr}][hrs]$

$4.10^4 = (.1911467\ \$/pc)(\frac{3600}{31}[\frac{pc}{hr}])(t\ [hrs])$

$t_{BE} = 225.2488$ Days assuming 8hrs per day