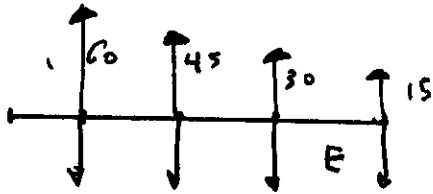
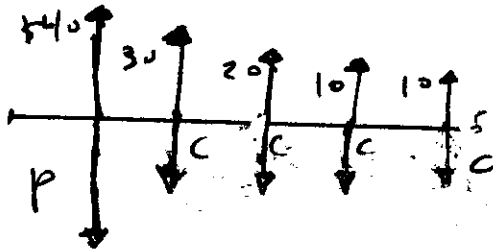


(3)



$$E = 60 - 15(A|G, 12\%, 4) = \boxed{\$39.6}$$

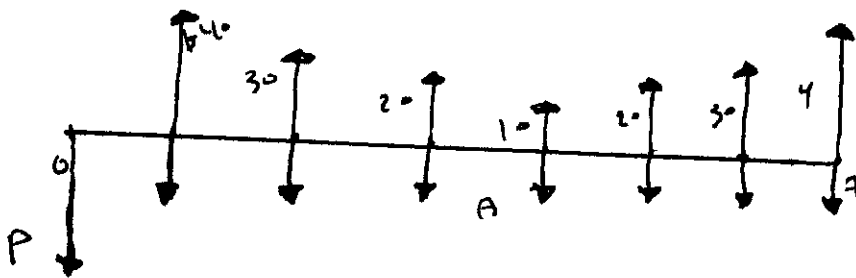
(6)



$$\begin{aligned} P &= 40 + 30(P|F, 10\%, 1) + 20(P|F, 10\%, 2) \\ &\quad + 10[(P|F, 10\%, 3) + (P|F, 10\%, 4)] \\ &= 40 + 30(0.9091) + 20(0.8264) \\ &\quad + 10[0.7513 + 0.6830] \\ &= 98.144 \end{aligned}$$

$$\begin{aligned} C &= 98.144(A|P, 10\%, 4) \\ &= 98.144(0.3155) = \boxed{\$31} \end{aligned}$$

(7)

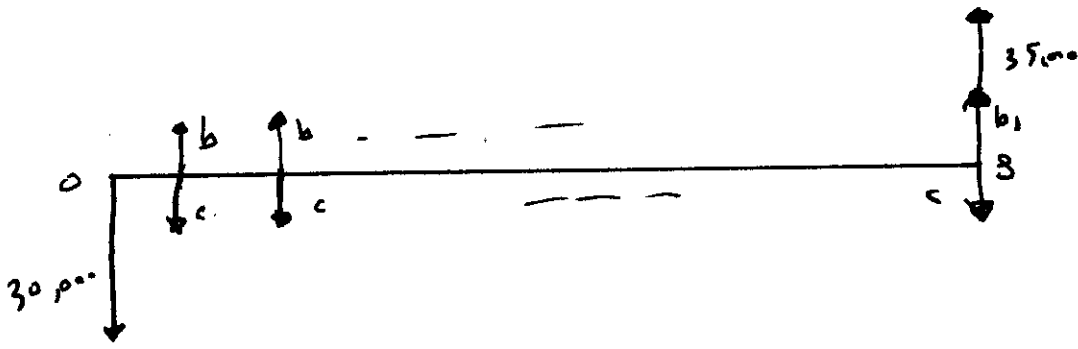


$$\begin{aligned} P &= 40[(P|F, 10\%, 1) + (P|F, 10\%, 7)] \\ &\quad + 30[(P|F, 10\%, 2) + (P|F, 10\%, 6)] \\ &\quad + 20[(P|F, 10\%, 3) + (P|F, 10\%, 5)] \\ &\quad + 10(P|F, 10\%, 4) \end{aligned}$$

$$A = P(A|P, 10\%, 7) = \boxed{\$27.3}$$

(1)

(11)



$$EUAC = C = 30,000 (A|P, 15\%, 8) = 6687$$

$$EUAB = 35,000 (A|F, 15\%, 8) + b = 2552 + b$$

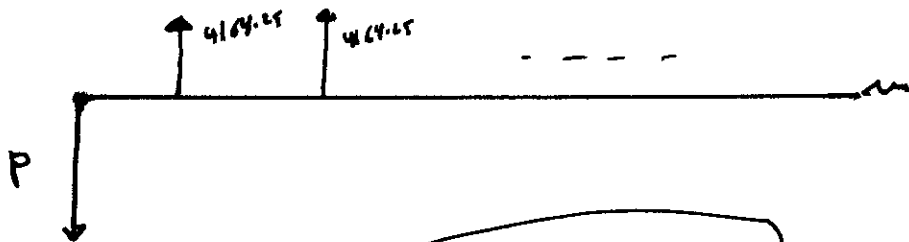
$$EUAC = EUAB$$

$$\Rightarrow 6687 = 2552 + b \Rightarrow b = \boxed{\$ 4135}$$

(21)



$$\begin{aligned} EUAC &= 2500 + 7500 (A|F, 8\%, 4) \\ &= 2500 + 7500 (0.2219) \\ &= \$ 4164.25 \end{aligned}$$



$$P = \frac{4164.25}{0.08} = \boxed{\$ 52,053}$$

$$(P = \frac{A}{i})$$

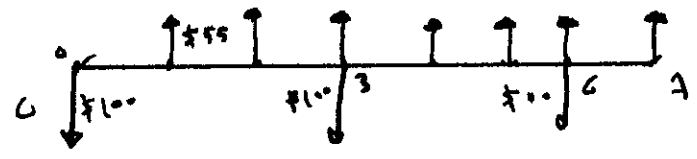
(2)

(29) done in class.

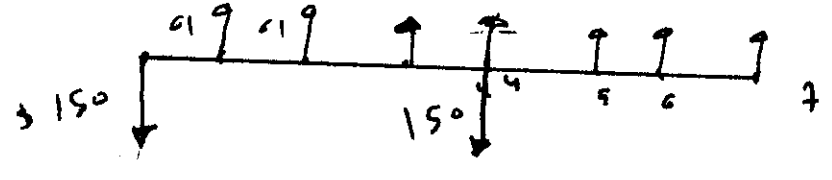
(32) done in class.

(42) We are using a 7-year analysis period. answer is identical costs and benefits.

option A



option B



For A:  $EUAC = 100 \left[ (1 + (PIF, 10\%, 3) + (PIF, 10\%, 4)) (A|P, 10\%, 7) \right]$   
 $= \$47.57$

$EUAB = \$55$

$\Rightarrow NEUA = 55 - 47.57 = \boxed{\$7.43}$

For B:  $EUAC = 150 (1 + (PIF, 10\%, 4)) (A|P, 10\%, 7)$   
 $= \$51.85$

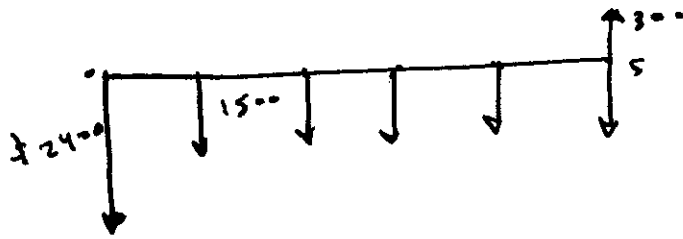
$EUAB = \$61$

$NEUA = 61 - 51.85 = \boxed{\$9.15}$

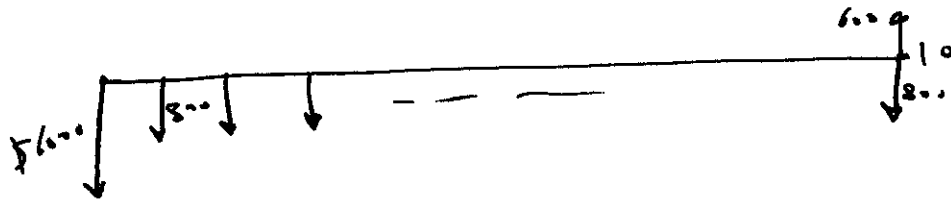
choose alternative B.

(43) The cash flow for the two alternatives are

Gasoline  
I



Electric  
II



$$EUAB_1 = 300 (A|F, 10\%, 5) = 149$$

$$EUAC_1 = 1500 + 2400 (A|P, 10\%, 5) = 2133$$

$$NEUA_1 = \boxed{-2084}$$

$$EUAB_2 = 600 (A|F, 10\%, 10) = 38$$

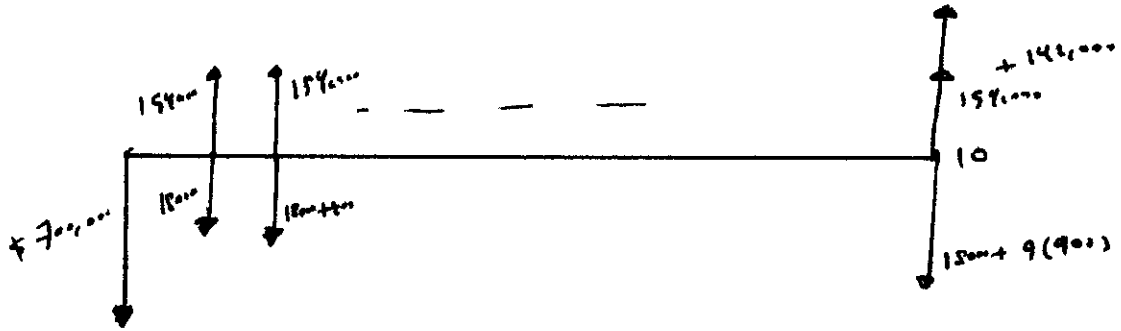
$$EUAC_2 = 800 + 6000 (A|P, 10\%, 10) = 1776$$

$$\Rightarrow NEUA_2 = \boxed{-1738}$$

Decision: power the pump using electricity

(47)

I.



$$EUAC_1 = 700,000 (A/P, 15\%, 10) + 18,000 + 900 (A/G, 15\%, 10)$$

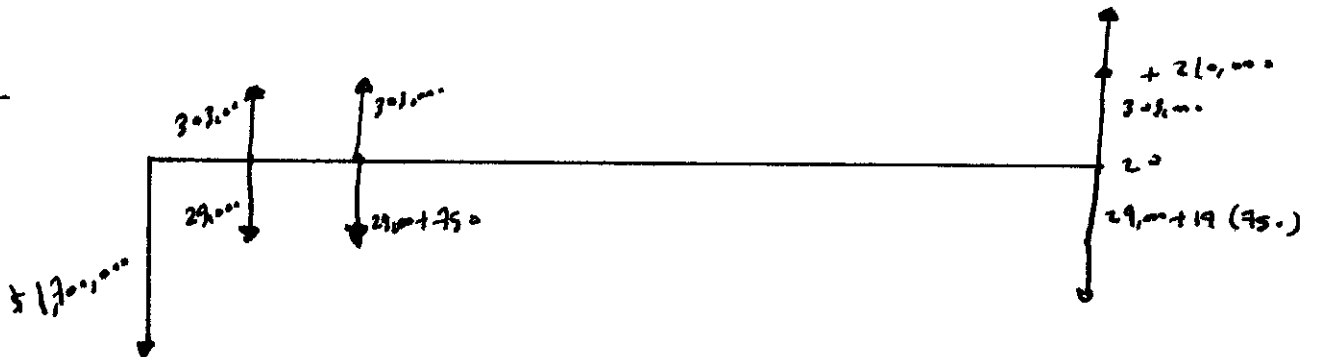
$$= \$160,555$$

$$EUAB_1 = 154,000 + 142,000 (A/F, 15\%, 10)$$

$$= \$161,001$$

$$NEUA_1 = \$446$$

II



$$EUAC_2 = 1,700,000 (A/P, 15\%, 20) + 29,000 + 750 (A/G, 15\%, 20)$$

$$= \$304,684$$

$$EUAB_2 = 303,000 + 210,000 (A/F, 15\%, 20)$$

$$= \$305,050$$

$$NEUA_2 = \$366$$

Decision: alternative A is more desirable.

(5)