Arunima Singh Thakur, 18090518, Sec C, Roll no 31, Branch CSE, EEFm Assignment 2

Question 5 - Reg. No. ending with 8

First cost = $40,000
Receipt in 1st year = $8,400
with a decreasing amount of $500/year
so, return for 15 years will form an AP
8400, 7900, 7400 ..... 15 terms

$a = 8400$
$d = -500$
$n = 15$
$Sum = 15/2 [2 * 8400 + 14 * (-500)]$
$Sum = 15/2 [16,800 - 7000]$
$Sum = 15/2 * 9,800$
$Sum = \$73,500$

Tax will also form an AP
$2400, 2200, \ldots$ 15 TERMS
$a = 2400$
$d = -200$
$n = 15$
$Sum = 15/2 [2 * 2400 + 14 * (-200)]$
$Sum = 15/2 [4800 - 2800]$
Sum = $15,000 (Total tax spendings)
Hence net revenue = $73,500 - $15,000
Net revenue = $58,500

5) First cost = $40,000

revenue in first year = $84,00

revenue declines by $500 each year. (7900, 7400, etc)

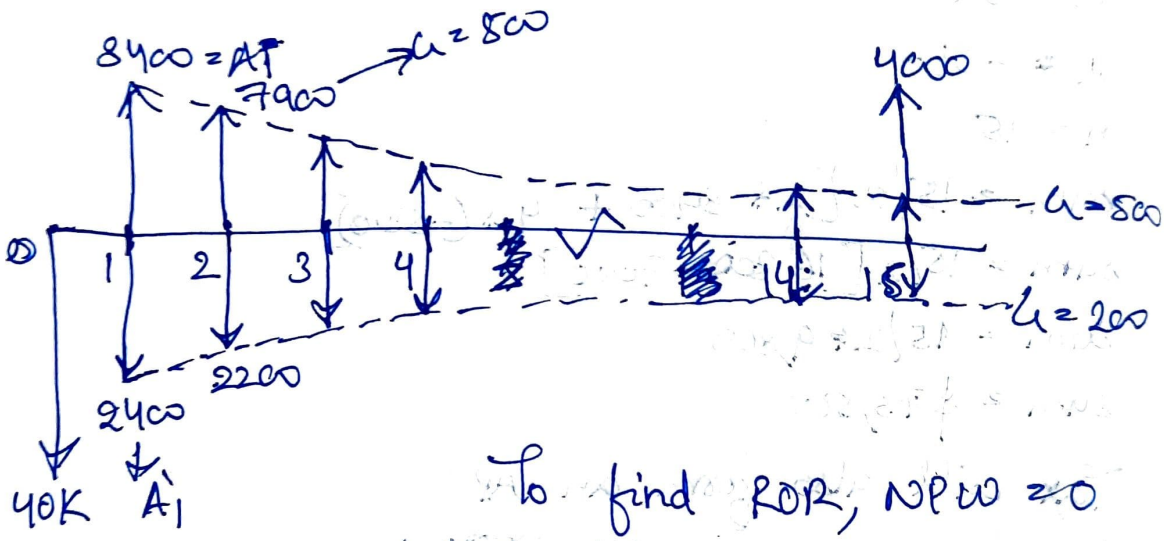
time = 15 yrs

salvage val = $4000

income taxes = 2400, 2200, 2000 (3rd) ...
(1st yr) (2nd yr)

∴ - taxes decrease by $200 each year

CFD :-



To find ROR, NPW = 0

$$NPW = -40,000 + [84,000 - 500(A/G, i, 15)](P/A, i, 15) + 4000(P/F, i, 15) + [-2400 + 200(A/G, i, 15)](P/A, i, 15)$$

⇒ NPW (i = 7%) = 364.4408

NPW (i = 10%) = -5452.0222

⇒ Required ROR = $7 + \frac{364.4408 - 0}{364.4408 + 5452.0222} \times (3)$

⇒ ROR = 7.1886% → Ans