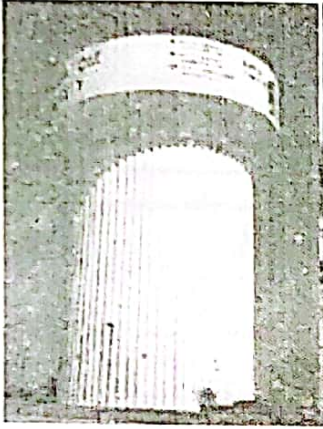


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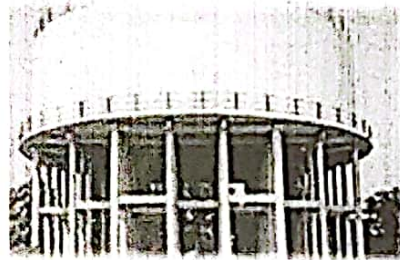
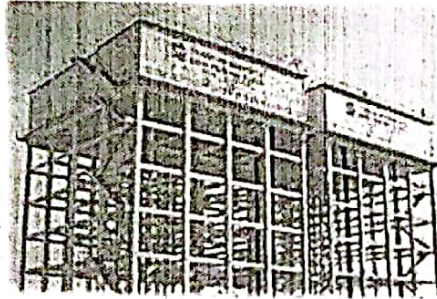
R.C TANKS

(ANALYSIS)

مثال مرسوم جدا



Elevated

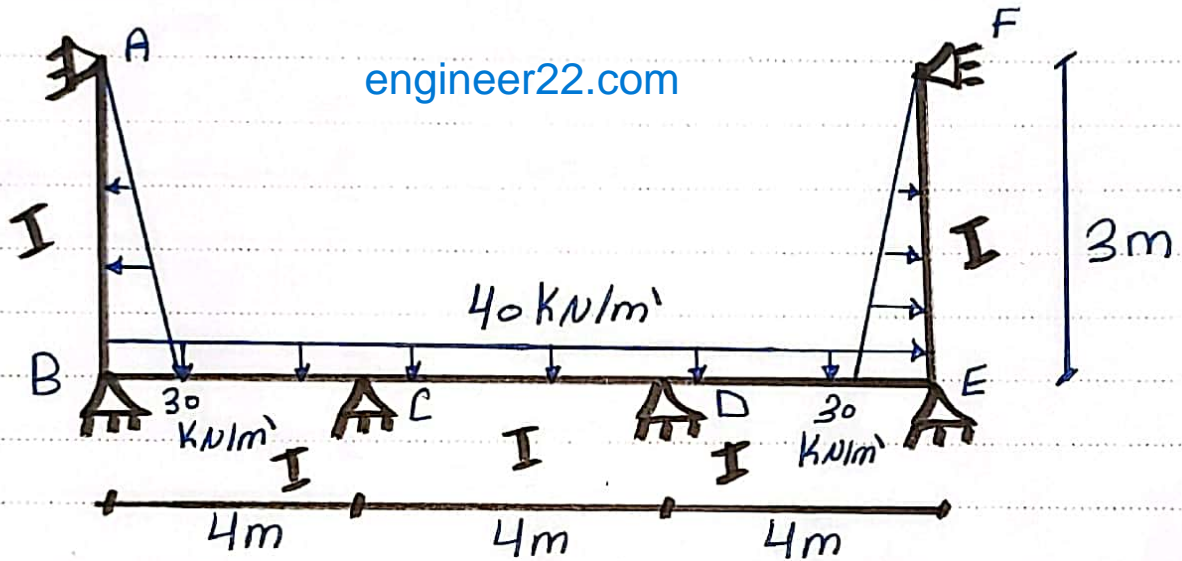


NO (T-3)

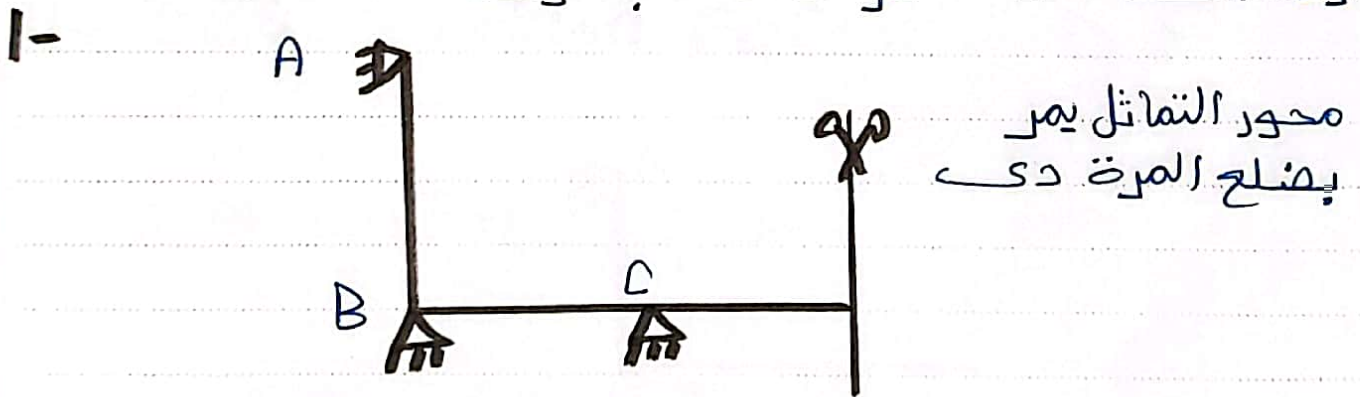
EXAMPLE

١٥٥

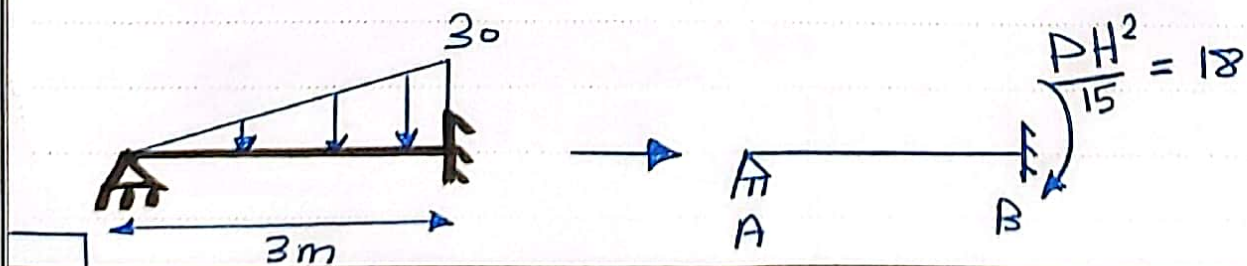
Draw B.M.D using moment Distribution

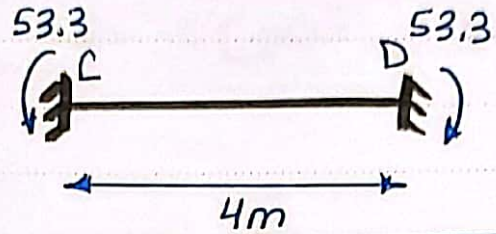
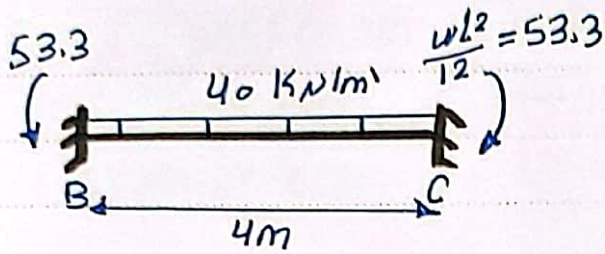


أولاً أرى مسألة جزائرية يتكون متجانسة :

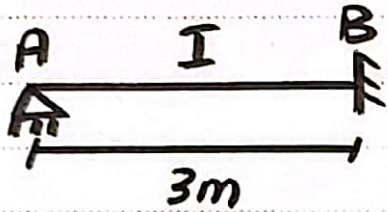


2- F.E.M

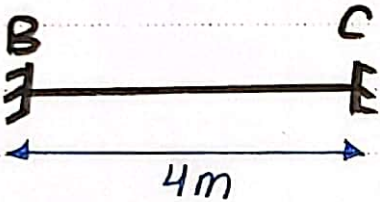




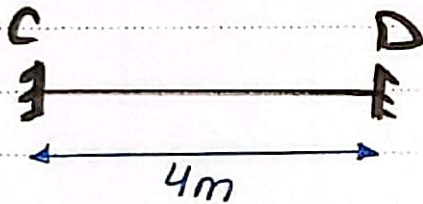
3- stiffness :-



$$\text{stiffness} = \frac{3I}{L} = \frac{3}{3}I = I$$



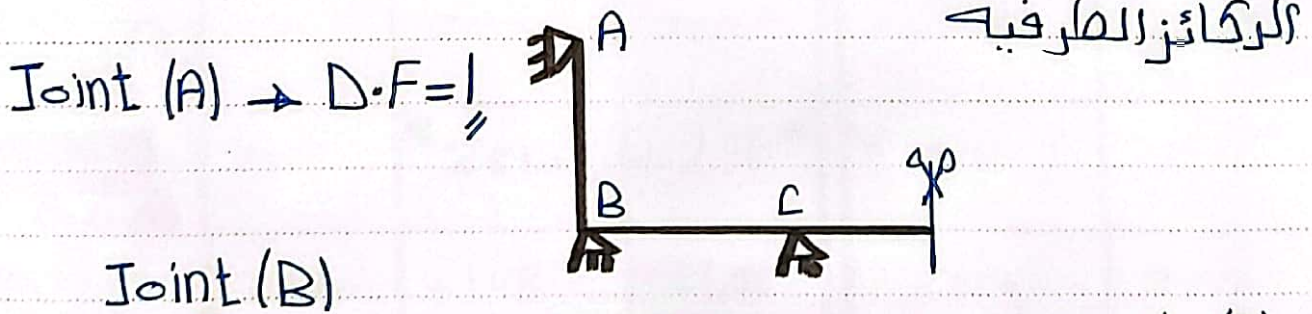
$$\text{stiffness} = \frac{4I}{L} = \frac{4}{4}I = I$$



$$\text{stiffness} = \frac{2I}{L} = \frac{2}{4}I = 0.5I$$

↑ القطع إلى بيير
بیه محور التماثل

4- Distribution Factor :- D.F



Joint (A) → D.F = 1

Joint (B)

$$D.f_{(BA)} = \frac{I}{I+I} = \frac{1}{2}$$

$$D.f_{(B.C)} = \frac{I}{I+I} = \frac{1}{2}$$

Joint (C)

$$D.f_{(CB)} = \frac{I}{I+0.5I} = 0.67$$

$$D.f = \frac{\text{stiffness} \leftarrow \text{member}}{\sum \text{stiffness}}$$

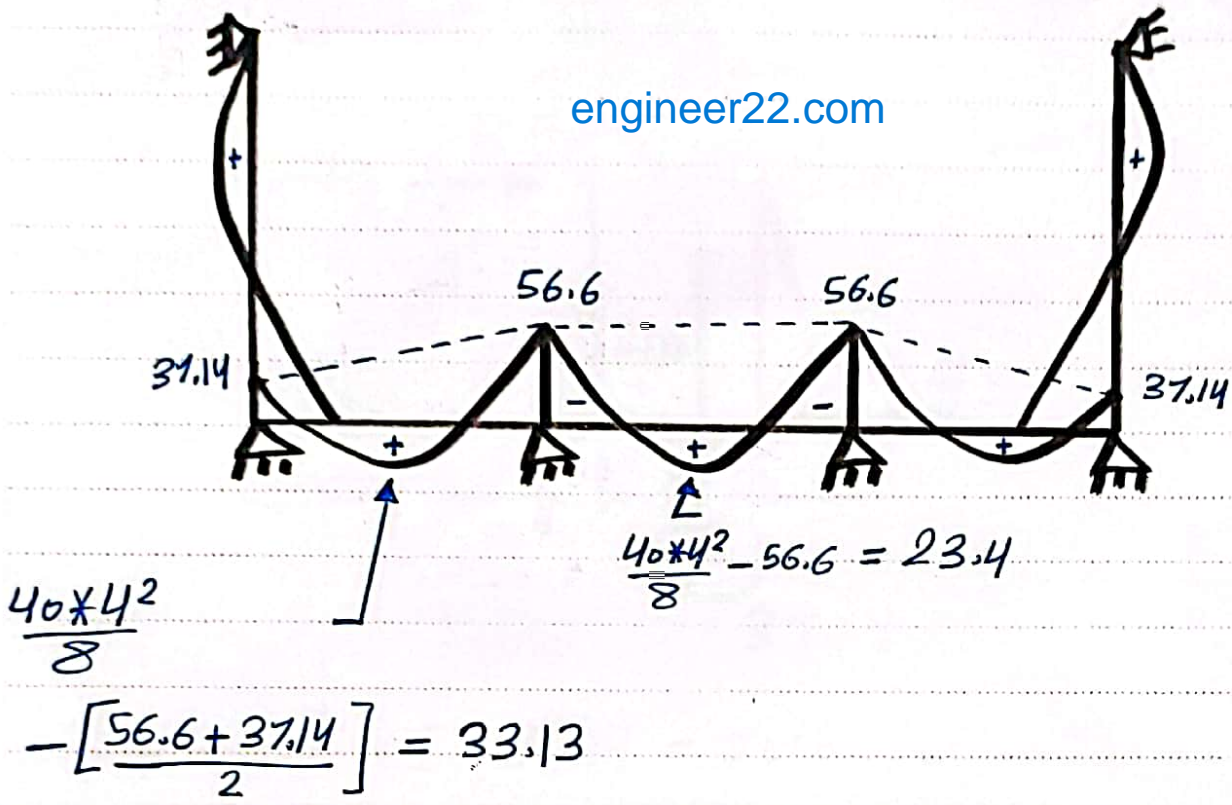
↓ بقاعة أضرار الوصل

أولاً نفسى :-

5. Table

Assume ↷⁺ ↶⁻

Joint	A	B		C	
member	A-B	B-A	B-C	C-B	C-D
D.f	1	0.5	0.5	0.67	0.33
F.E.M	zero	+18	35.3 -53.3	+53.3	00 -53.3
D.m	zero	+17.66	+17.66	zero	zero
C.O.M	zero	zero	zero	+8.83	-8.83 zero
D.m	zero	zero	zero	-5.91	-2.91
C.O.M	zero	zero	2.96 -2.96	zero	zero
D.m	zero	+1.48	+1.48	zero	zero
C.O.M	zero	zero	zero	1.24	-1.24 zero
D.m	zero	zero	zero	-0.83	-0.4
Final moment	zero	+37.14	-37.14	+56.63	-56.21



السؤال بيجه إزاعة في m_c ؟؟

١- هيسألك على العزوم السالبة m_c ، m_B

٢- ممكن يسألك على أكبر عزوم سالبة وهو في مسألتنا m_c

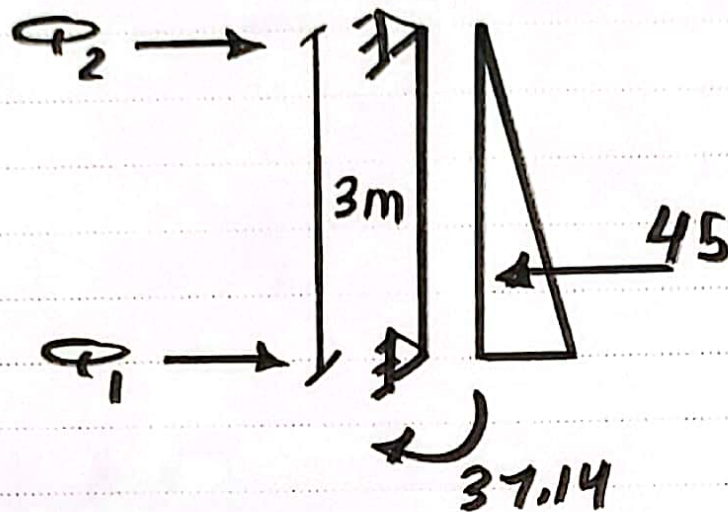
٣- هيسألك على أكبر عزوم موجب على البلاطة

$$m^+ = 33.13$$

٤- هيسألك على الشد على البلاطة

« Tension on Floor »

(FREE BODY FOR wall)



$$Q_1 * 3 - 45 * 2 - 37.14 = \text{zero}$$

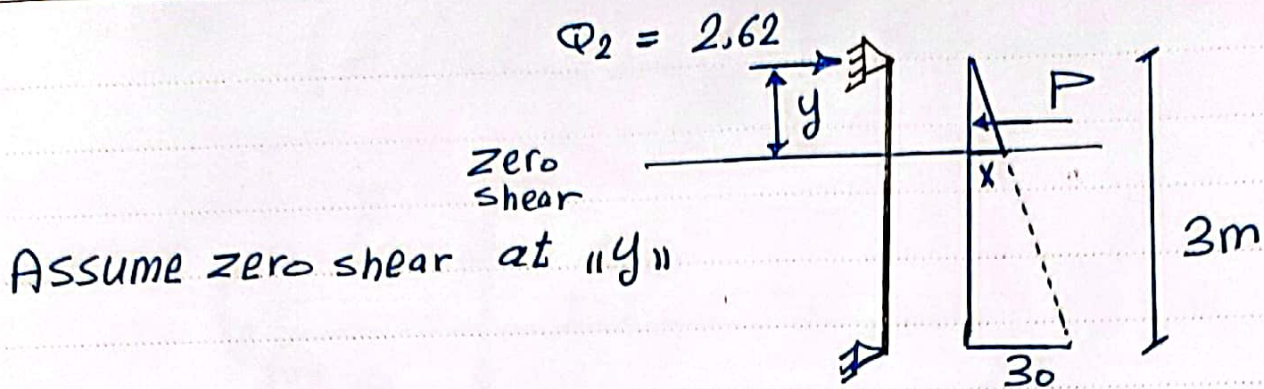
$$\therefore Q_1 = 42.38 \text{ kN}$$

$$Q_2 = 2.62 \text{ kN}$$

Tension on Floor = shear on wall
 $= Q_1 = 42.38 \text{ kN}$

٥ - هيبألك عن العزم المو جب على الحائط

Positive moment is at zero shear



$$Q_2 = P = 2.62$$

$$P = \frac{1}{2} X * y \rightarrow \textcircled{1}$$

$$\frac{X}{30} = \frac{y}{3} \therefore X = 10y \rightarrow \textcircled{2}$$

بالتعويض من $\textcircled{2}$ في $\textcircled{1}$

$$\therefore P = \frac{1}{2} * 10y * y = 2.62$$

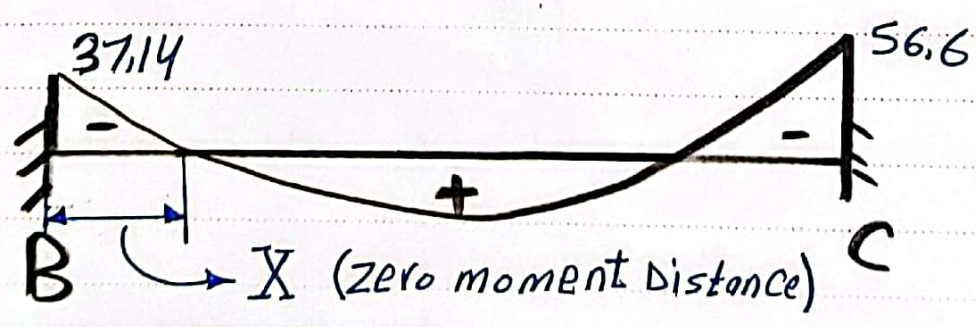
$$\therefore y = 0.72 \text{ m}$$

$$m^+ = \frac{2}{3} Q_2 y$$

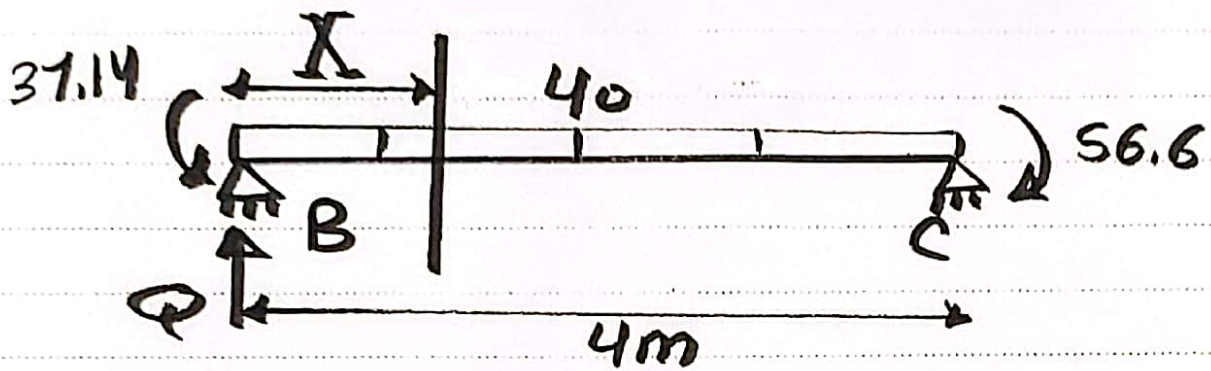
العزم الموجب
على الحائط
حفظا #

$$= \frac{2}{3} * 2.62 * 0.72 = 1.26 \text{ kN.m}$$

7- هيسألنا عن مكان zero moment في Floor c



(FREE BODY FOR FLOOR)



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$$Q \times 4 + 56.6 - 37.14 - 40 \times 4 \times 2 = \text{zero}$$

$$\therefore Q = 75.13 \uparrow$$

Assume zero moment at X

$$\therefore Q \times X - 37.14 - 40 \times X \times \frac{X}{2} = \text{zero}$$

$$\therefore X = 0.67 \text{ m}$$

كل الفكرة بعد حساب (Reaction) البلاطة يفرض أنه

zero moment على بعد (X) وأخذ عزم عند المكان

وهو وأساليه بالفهرس كده #