

ASSIGNMENT

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B TECH CIVIL

SUBMITTED TO

ENGR, MUSAAB HABIB BANGASH

SUBJECT: THEORY OF STRUCTURE 2

IQRA NATIONAL UNIVERSITY PESHAWAR

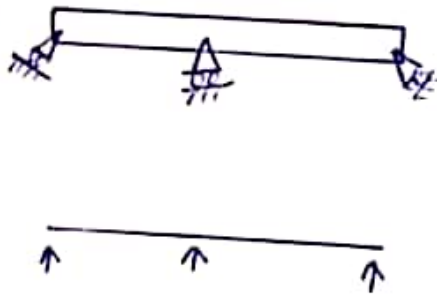
Q No, 1. Fill in the blanks.

Answers

1. Brut force method
2. Determinant
3. Statically determinant
4. No of members
5. Three

Q No, 2.

(a)



$$\text{No of members} = n = 1$$

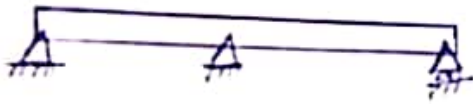
$$\text{No of reaction} = 3$$

$$\text{As } R = 3n$$

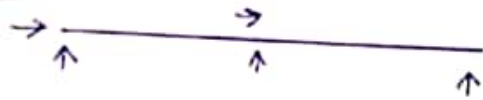
$$\Rightarrow 3 = 3(1)$$

$$3 = 3 \quad \text{Determinant}$$

(b)



Sol:



No of member = $n = 1$

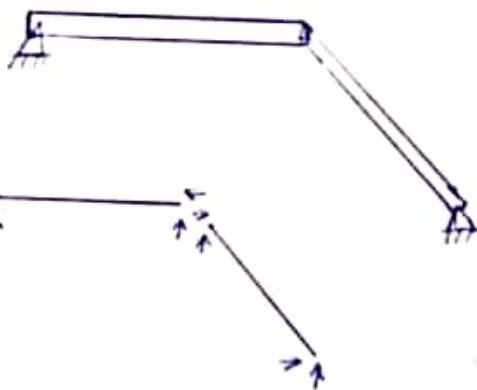
No of reaction = 5

As $R = 3n$

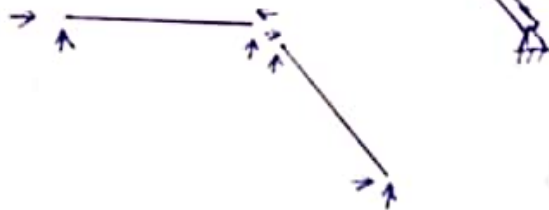
$$5 = 3(1)$$

$5 > 3$ indeterminate by 2°

(c)



Sol:



No of member = 2

No of reaction = 6

$$R = 3n$$

$$6 = 3(2)$$

$6 = 6$ Determinate

(d)



Sol:



No of member = $n = 1$

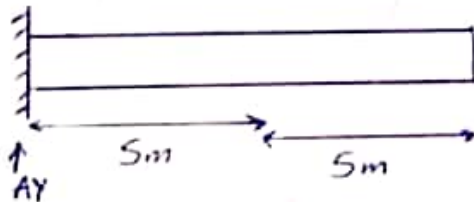
No of reaction = 3

$R = 3n$

$3 = 3(1)$

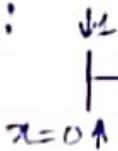
$3 = 3$ Determinate

Q No, 3. Find influence line for reaction at A_y due to moving concentrated force by using Brul force method



Solution:

If $x = 0$



$A_y = 1$

$\uparrow \sum F = 0$

$-1 + A_y = 0$

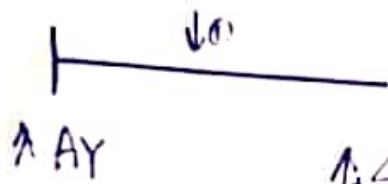
$A_y = 1$

• Use brul force statistics

• Place the load and calculate

x	A_y
0	1
5	1
10	1

$1) x = 5m$

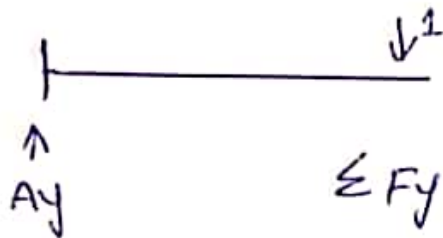


$$\uparrow \sum F_y = 0$$

$$-1 + A_y = 0$$

$$A_y = 1$$

$1) x = 10m$



$$\sum F_y = 0$$

$$-1 + A_y = 0$$

$$A_y = 1$$

Now Influence Line:

