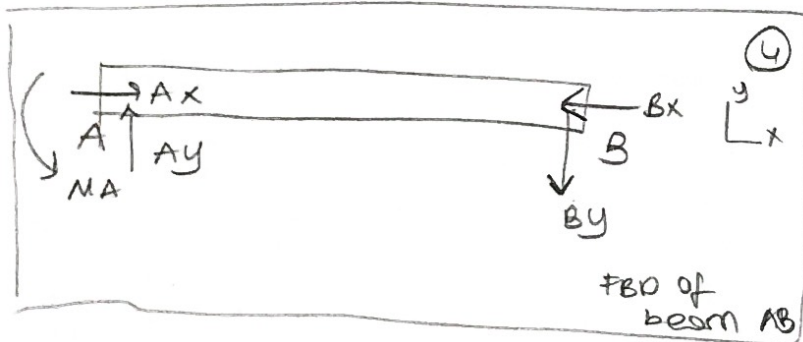
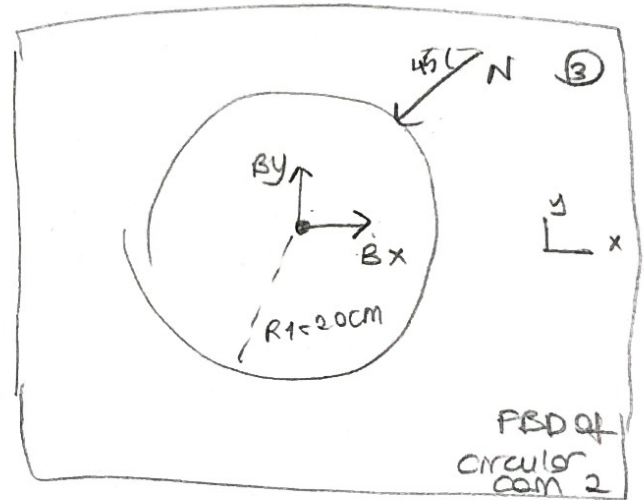
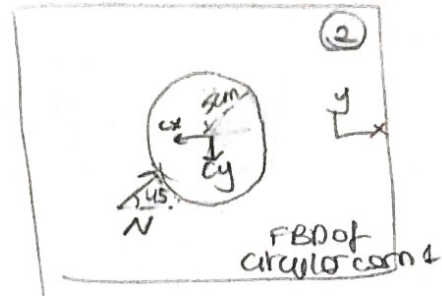
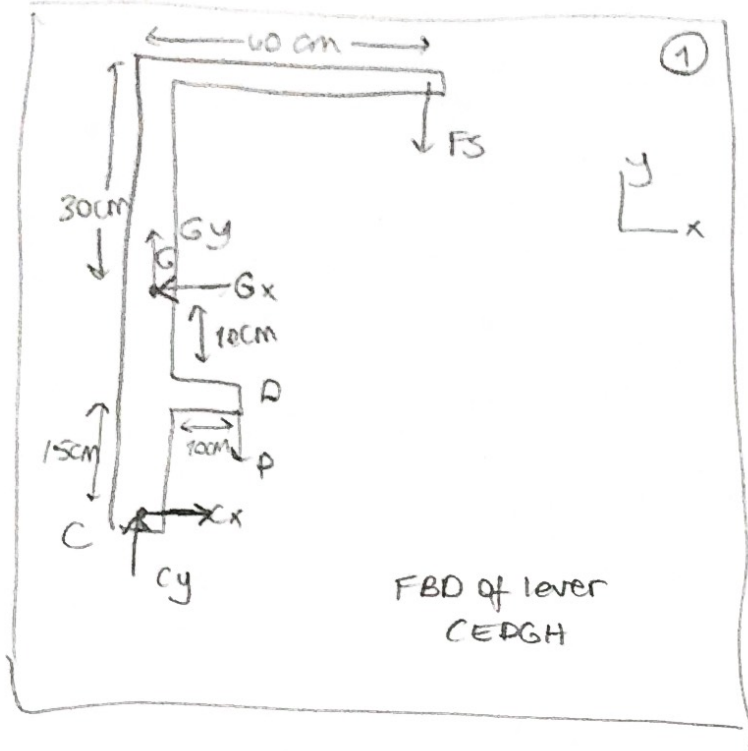


$d = 8$
 $c = 2$
 $b = 1$
 $a = 3$

$P = 5(3+16)N = 95N$

$k = 5(2+1+1)N/cm = 20N/cm$



Eqm Eqn on FBD 1

$FS = k \cdot x = 20N/cm \cdot 5cm = 100N \rightarrow$ force exerted by spring

$\sum M_c = 0 \quad -FS \cdot 40cm + G_x \cdot 25cm - P \cdot 10cm = 0 \quad (1)$

$G_x = 198N$

$\rightarrow \sum F_x = 0$

$C_x - G_x = 0 \quad (2) \quad \boxed{C_x = 198N}$

$\uparrow \sum F_y = 0$

$C_y + G_y - FS - P = 0 \quad (3)$

Eqm Eqn on FBD 2

$$\rightarrow \Sigma F_x = 0 \rightarrow N \cos 45 - C_x = 0 \quad (4)$$

$$N = 280.01 \text{ N}$$

$$\uparrow \Sigma F_y = 0 \rightarrow N \sin 45 - C_y = 0 \quad (5)$$

$$C_y = 198 \text{ N}$$

Eqm Eqn on FBD 3

$$\rightarrow \Sigma F_x = 0 \rightarrow -N \cos 45 + B_x = 0 \quad (6)$$

$$B_x = 198 \text{ N}$$

$$\uparrow \Sigma F_y = 0 \rightarrow -N \sin 45 + B_y = 0 \quad (7)$$

$$B_y = 198 \text{ N}$$

Eqm Eqn on FBD 4

$$\rightarrow \Sigma F_x = 0 \rightarrow A_x - B_x = 0 \quad (8)$$

$$A_x = 198 \text{ N}$$

$$\uparrow \Sigma F_y = 0 \rightarrow A_y - B_y = 0 \quad (9)$$

$$A_y = 198 \text{ N}$$

$$\odot \Sigma M_A = 0 \rightarrow M_A - B_y \cdot 30 \text{ cm} = 0 \quad (10)$$

$$M_A - 198 \text{ N} \cdot 30 \text{ cm} = 0$$

$$M_A = 5940 \text{ N}\cdot\text{cm}$$

Reactions at A \rightarrow $A_x = 198 \text{ N}$
 $A_y = 198 \text{ N}$

$$\vec{A} = 198 \text{ N} \hat{i} + 198 \text{ N} \hat{j}$$

$$\odot M_A = 5940 \text{ N}\cdot\text{cm}$$