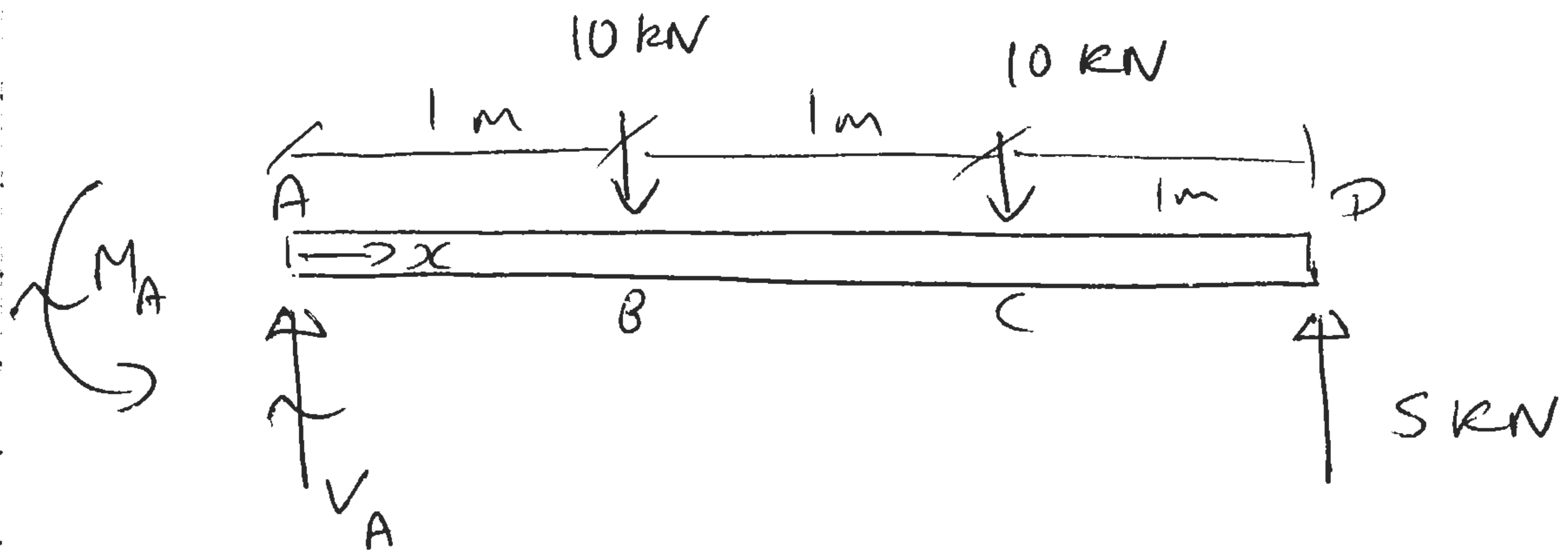


M3

a)

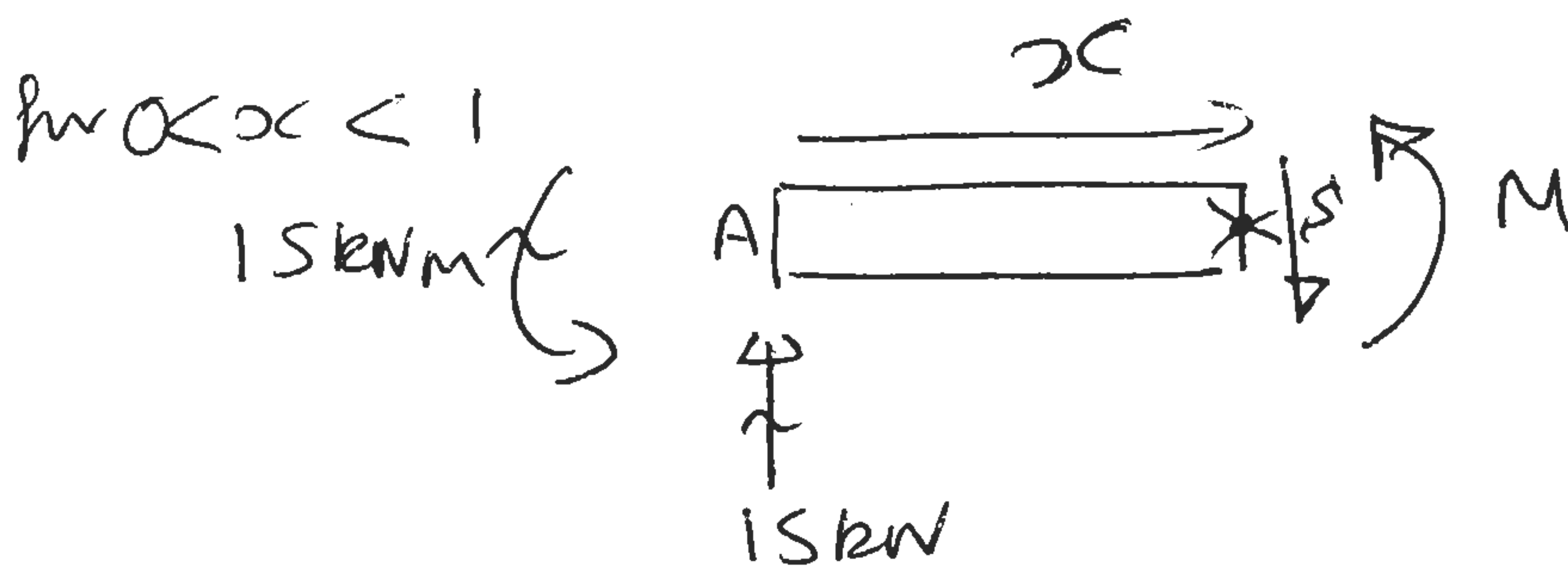


$$\sum F_y \uparrow = 0 \quad V_A - 10 - 10 + S = 0$$

$$V_A = 15 \text{ kN} \leftarrow$$

$$\sum M = 0: \quad M_A - 10 \times 1 - 10 \times 2 + S \times 3 = 0$$

$$M_A = 15 \text{ kNm} \leftarrow$$

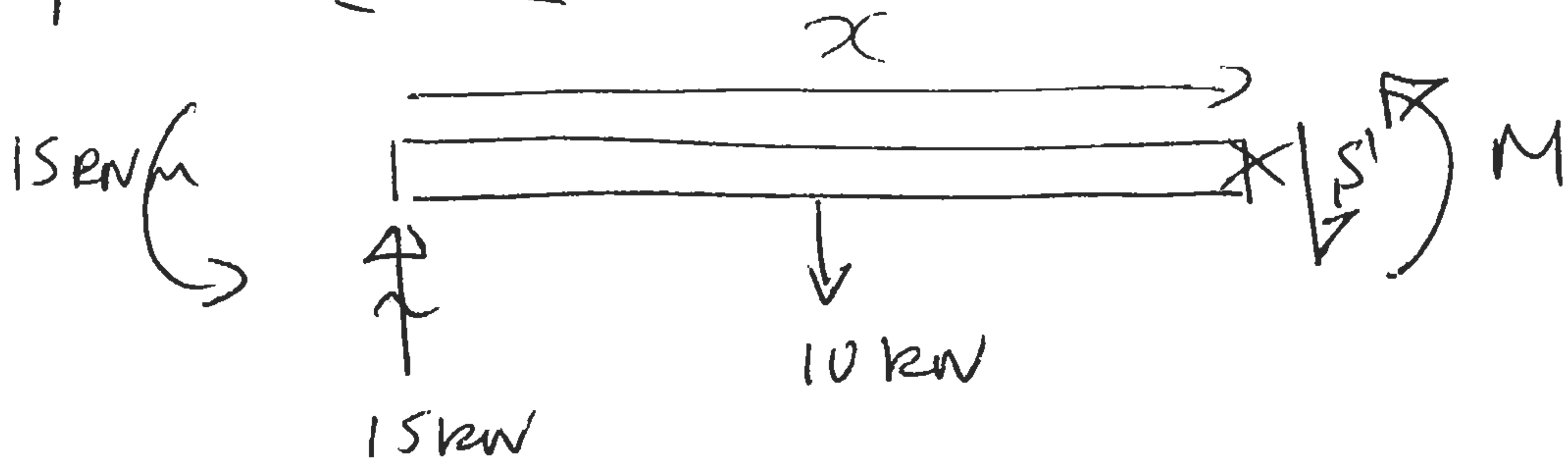


$$\sum F_y \uparrow = 0 \quad 15 - S = 0 : \quad S = 15 \text{ kN}$$

$$\sum M = 0: \quad M - 15x + 15 = 0$$

$$M = 15x - 15 \text{ (kNm)}$$

for $1 \leq x \leq 2$



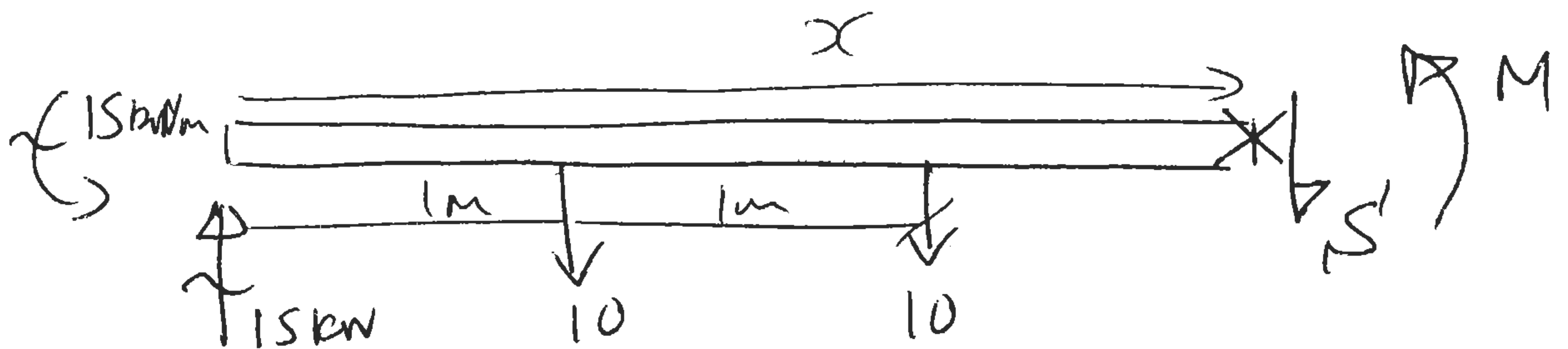
$$\sum F_y \uparrow = 0 \quad 15 - 10 - S' = 0 \quad S' = 5 \text{ kN}$$

$$\sum (M_x = 0) \quad M - 15x + 10(x-1) + 15 = 0$$

$$\quad \quad \quad -5x + 5$$

$$M = 5x - 5$$

for $2 \leq x \leq 3$



$$\sum F_y \uparrow = 0 \quad 15 - 10 - 10 - S' = 0 \quad S' = -5 \text{ kN}$$

$$\sum (M_x = 0) : M + 15 - 15x + 10(x-1) + 10(x-2) = 0$$

$$\quad \quad \quad +15 \quad -15x \quad +10x \quad +10x \quad -10 \quad -20$$

$$M = 15 - 5x$$

Plotting

