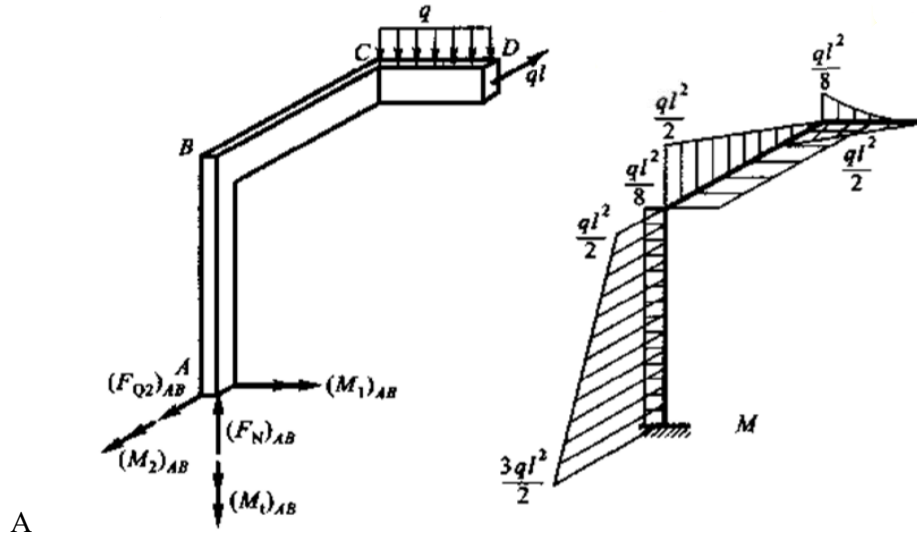
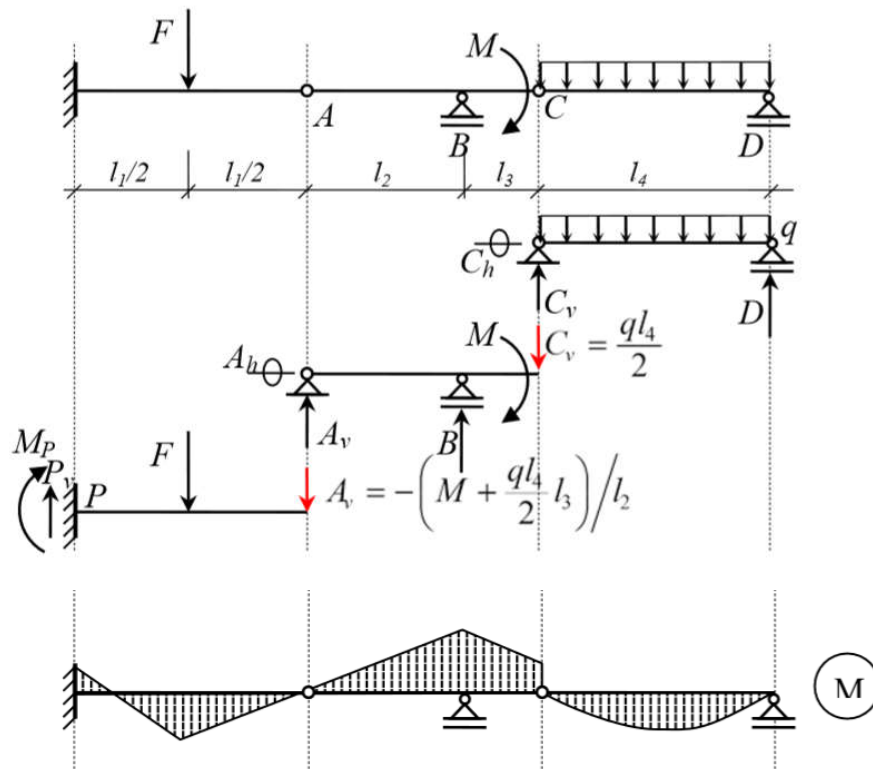


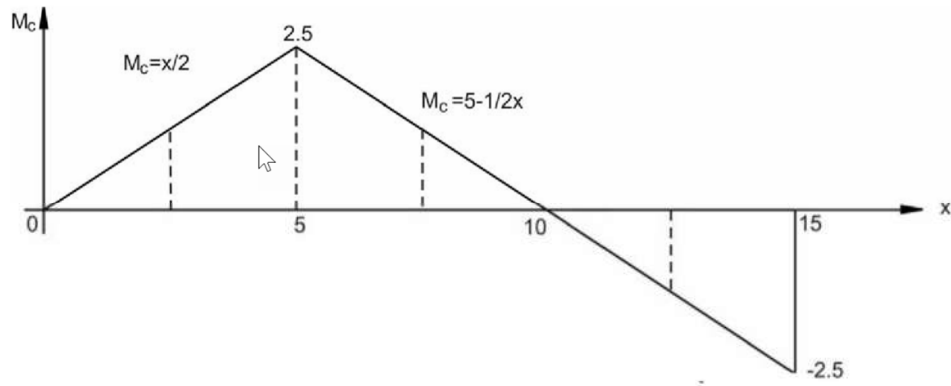
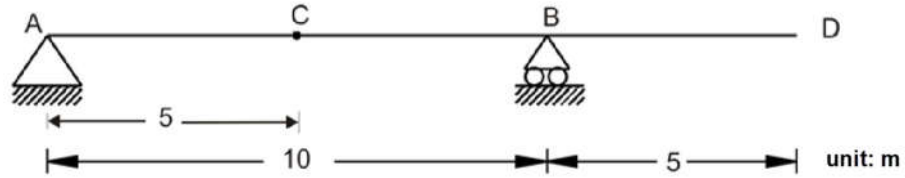
**Câu 1: (1 điểm)**



**Câu 2: (1 điểm)**



**Câu 3: (2 điểm)**



**Influence line of moment at section C**

**Câu 4: (3 điểm)**

Find horizontal and vertical deflection of joint C of truss ABCD:

Computational details for horizontal deflection at C

Member	Length	$L_i / A_i E_i$	$P_i$	$(\delta P_v)_i$	$\frac{(\delta P_v)_i P_i L_i}{E_i A_i}$
units	m	m/kN	kN	kN	kN.m
AB	4	4/AE	0	0	0
BC	4	4/AE	0	0	0
CD	4	4/AE	-15	-1	60/AE
DA	4	4/AE	0	0	0
AC	$4\sqrt{2}$	$4\sqrt{2} / AE$	$5\sqrt{2}$	$\sqrt{2}$	$40\sqrt{2} / AE$
				$\Sigma$	$\frac{60 + 40\sqrt{2}}{AE}$

$$(1)(u_C^H) \Rightarrow \frac{60 + 40\sqrt{2}}{AE} = \frac{116.569}{AE} \quad (\text{Towards right})$$

Computational details for vertical deflection at C

Member	Length	$L_i / A_i E_i$	$P_i$	$(\delta P_v)_i$	$\frac{(\delta P_v)_i P_i L_i}{E_i A_i}$
units	m	m/kN	kN	kN	kN.m
AB	4	4/AE	0	0	0
BC	4	4/AE	0	0	0
CD	4	4/AE	-15	-1	60/AE
DA	4	4/AE	0	0	0
AC	$4\sqrt{2}$	$4\sqrt{2}/AE$	$5\sqrt{2}$	0	0
				$\Sigma$	$\frac{60}{AE}$

$$(1)(u_C^v) \downarrow = \frac{60}{AE} = \frac{60}{AE} \quad (\text{Downwards}) \quad (4)$$

**Câu 5: (3 điểm)** Vẽ biểu đồ mômen cho khung :

