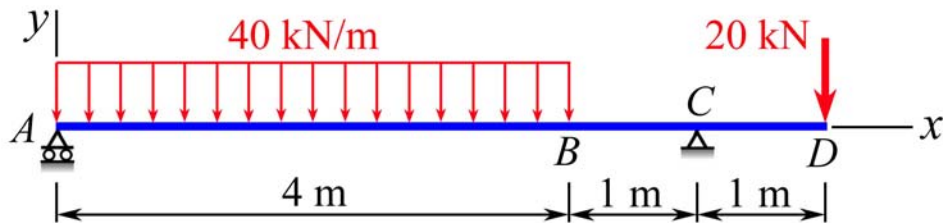


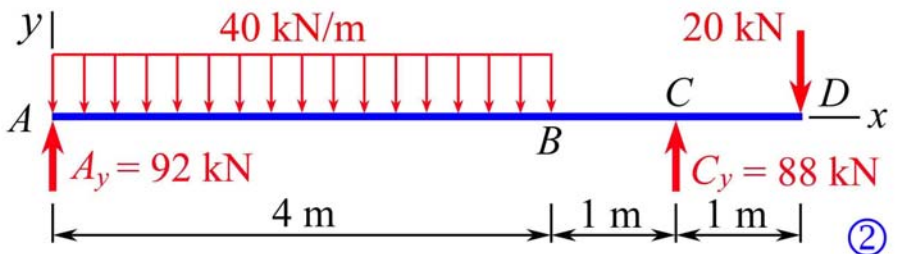
MEEG 3013 Quiz #5.m13.072

For the beam supported and loaded as shown, (a) draw the free-body diagram and determine the reactions at A and C, (b) draw the shear diagram, (c) draw the bending-moment diagram.



$$+\circlearrowleft \Sigma M_C = 0:$$

$$-5A_y + 3(160) - 1(20) = 0 \quad \therefore A_y = 92 \text{ kN}$$



$$+\uparrow \Sigma F_y = 0:$$

$$92 + C_y - 160 - 20 = 0 \quad \therefore C_y = 88 \text{ kN}$$

$$\frac{92}{b} = \frac{68}{4-b}$$

$$92(4-b) = 68b$$

$$\therefore b = 2.3 \text{ m} \quad (2)$$

