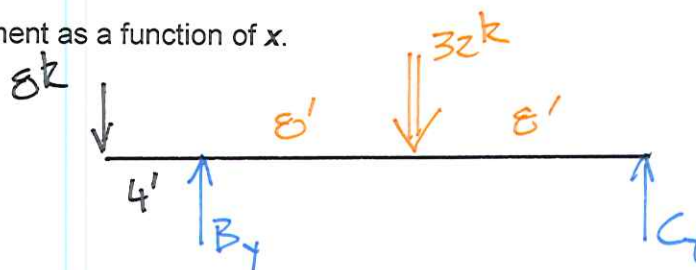
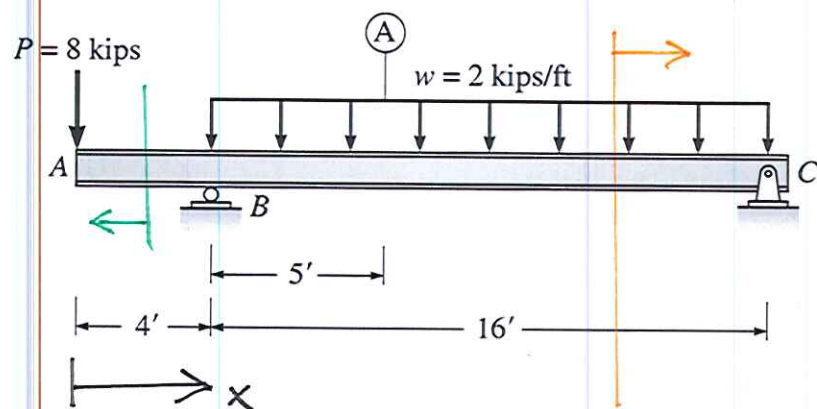


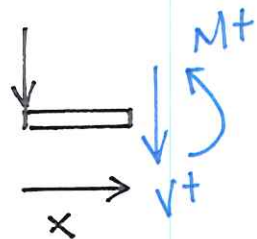
Example 4b-4 - Determine the internal shear and bending moment as a function of x .



$$\sum M_B = 0 = 8k(4') - 32k(8') + C_y(16')$$

$$\underline{C_y = 14k}$$

$0 \leq x \leq 4$



$$\sum M_{cut} = 0 = M + 8k(x)$$

$$\sum F_y = 0 = -V - 8k$$

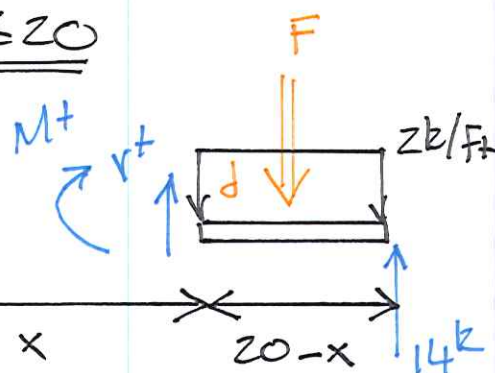
$$\underline{M_I = -8x \text{ kft}}$$

$$\underline{V = -8k}$$

$$M(x=0) = 0 \quad \checkmark$$

$$\frac{dM}{dx} = V \quad \checkmark$$

$4 \leq x \leq 20$



$$F = (20-x)2 \quad d = \frac{20-x}{2}$$

$$\sum M_{cut} = 0 = -M - 2(20-x)\frac{20-x}{2} + 14(20-x)$$

$$\underline{M_{II} = [-(20-x)^2 + 14(20-x)] \text{ kft}}$$

$$\sum F_y = 0 = V - 2(20-x) + 14$$

$$\underline{V = [2(20-x) - 14]k}$$

$$M(x=20) = 0 \quad \checkmark$$

$$M_I(x=4) = M_{II}(x=4) \quad \checkmark$$

$$\frac{dM}{dx} = V \quad \checkmark$$