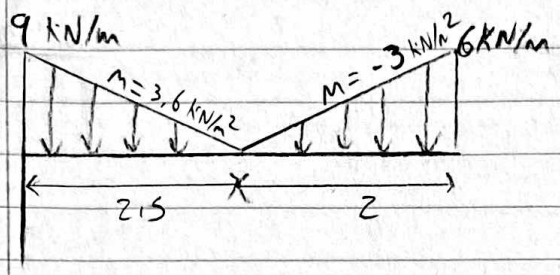
Solutions: 21-S-7.3-MK-04 & 21-S-73-MK-05

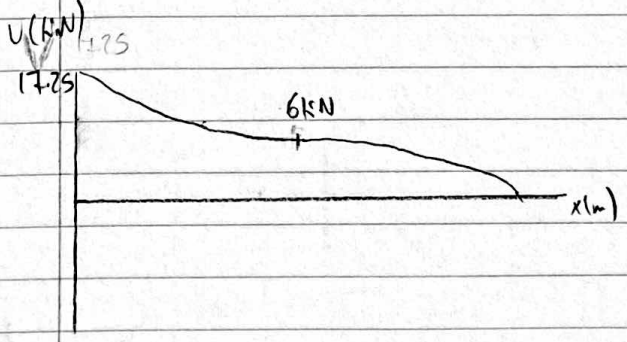


$$\Sigma M_A = 0 = -\frac{1}{2}(9\,kN/m)(2.5m)(2.5m)\frac{1}{3} - \frac{1}{2}(6\,kN/m)(2m)\left((2m)\frac{2}{3} + 2.5\right)$$

$$M_A = 32.375$$

$$\Sigma F_y = 0 = A_y - \frac{1}{2}(9\,kN/m)(2.5m) - \frac{1}{2}(6\,kN/m)(2m)$$

$$A_y = 17.25\,kN$$



$V_A = 17.25\,kN$

$$V_B = 17.25 + \int -9 + 3.6x$$

$$17.25 - 9x + \frac{3.6x^2}{2}$$

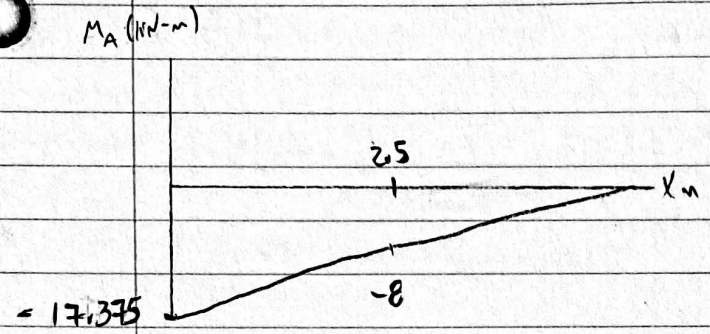
$$17.25 - 9(2.5m) + \frac{3.6(2.5)^2}{2} \Rightarrow V_B = 6\,kN$$

$$V_C = 6\,kN + \int -3x$$

$$6\,kN - \frac{3x^2}{2}$$

$$6\,kN - \frac{3(2)^2}{2} = 0$$

FIVE STAR



$$M_A = 0 - 32.375 = -32.375$$

$$M_B = -32.375 + \int 17.25 - 9x + 1.8x^2$$

$$-32.375 + 17.25x - \frac{9x^2}{2} + \frac{1.8x^3}{3}$$

$$-32.375 + 17.25(2.5) - \frac{9(2.5)^2}{2} + \frac{1.8(2.5)^3}{3}$$

$$M_B = 8$$

$$M_C = -8 + 56 - \frac{3x^2}{2}$$

$$= -8 + 6x - \frac{3x^3}{6}$$

$$= -8 + 6(2) - \frac{3(2)^3}{6} = C$$

FIVE STAR.
★★★★★

Solutions: 21-5-7.3-MK-05

@ 3.37m → 3.37m - 2.5m = 0.87m

$$V_d = 6\,kN - \frac{3\,kN/m^2\,(0.87m)^2}{2} \rightarrow V_d = 4.864$$

$$M_d = -8\,kNm + 6\,kN(0.87m) - \frac{3\,kN/m^2\,(0.87m)^3}{6}$$

$M_d = -3.109\ kNm$

FIVE STAR.
★★★★★