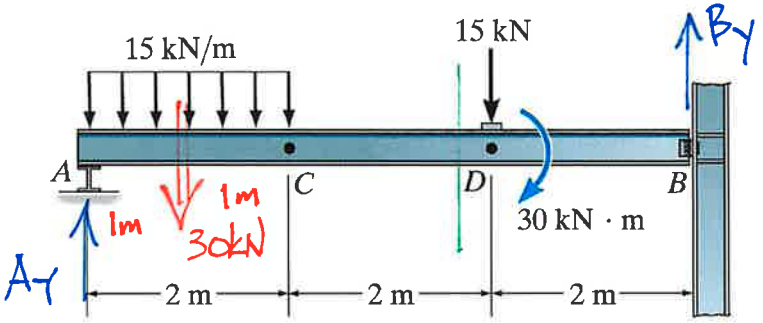
Example 4a-5 - Determine the internal shear force and bending moment at a section to left of point *D*.

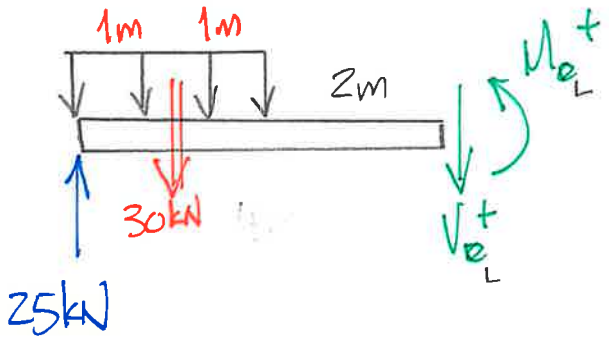


$$\circlearrowleft + \sum M_B = 0 = -30\,kN\,m + 15kN(2m) + 30kN(5') - A_y(6m)$$

$$A_y = 25kN$$

$$+\uparrow \sum F_y = 0 = A_y + B_y - 15kN - 30kN \qquad B_y = 20kN$$

JUST TO THE LEFT OF D



$$\circlearrowleft + \sum M_{CUT} = 0 = M_{D_L} + 30kN(3m) - 25kN(4m)$$

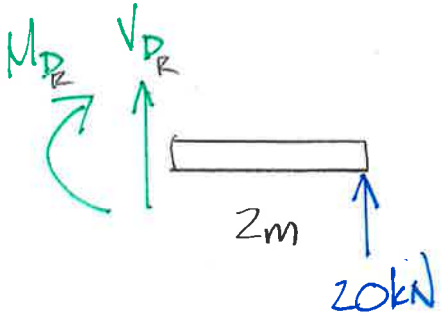
$$M_{D_L} = 10\,kN\,m$$

$$+\uparrow \sum F_y = 0 = -V_{D_L} - 30kN + 25kN$$

$$V_{D_L} = -5kN$$

$$\Delta M_D = M_o$$

RIGHT OF D



$$\circlearrowleft + \sum M_{CUT} = 0 = -M_{D_R} + 20kN(2m)$$

$$M_{D_R} = 40\,kN\,m$$

$$\Delta V_D = V_o$$

$$+\uparrow \sum F_y = 0 = V_D + 20kN$$

$$V_{D_L} = -20kN$$