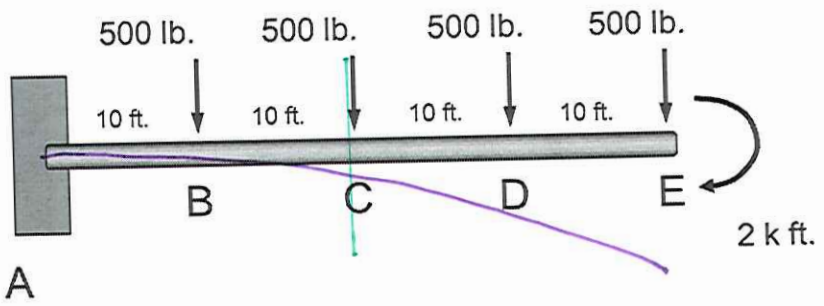
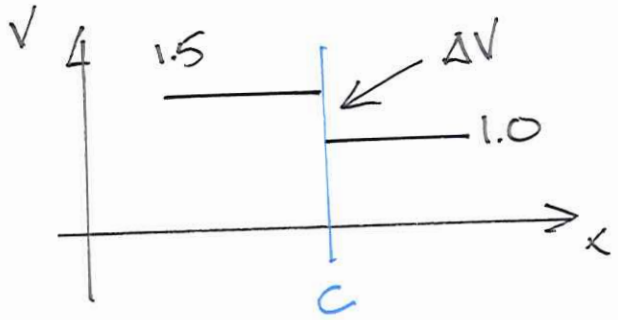
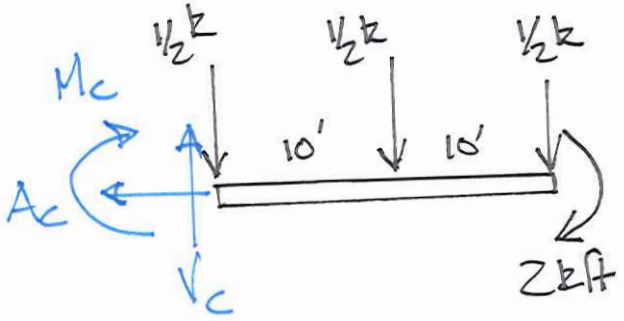
Example 4a-1 - Determine the internal shear and moment in the cantilever beam shown above at a section passing through point C.





JUST TO THE LEFT OF C



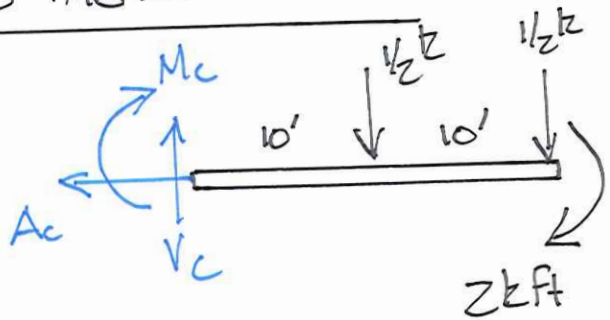
$\circlearrowleft +\sum M_{cut} = 0 = -M_c - \frac{1}{2}k(10') - \frac{1}{2}k(20') - 2kft$

$M_c = -17kft$

$+\uparrow \sum F_y = 0 = V_c - \frac{1}{2}k - \frac{1}{2}k - \frac{1}{2}k \quad V_c = 1.5^k$

$\rightarrow + \sum F_x = 0 = -A_c$

JUST TO THE RIGHT OF C



$\circlearrowleft +\sum M_{cut} = 0 = -M_c - \frac{1}{2}k(10'+20') - 2kft$

$M_c = -17kft$

$+\uparrow \sum F_y = 0 = V_c - \frac{1}{2}k - \frac{1}{2}k \quad V_c = 1^k$

$\Delta V_c = -\frac{1}{2}k$