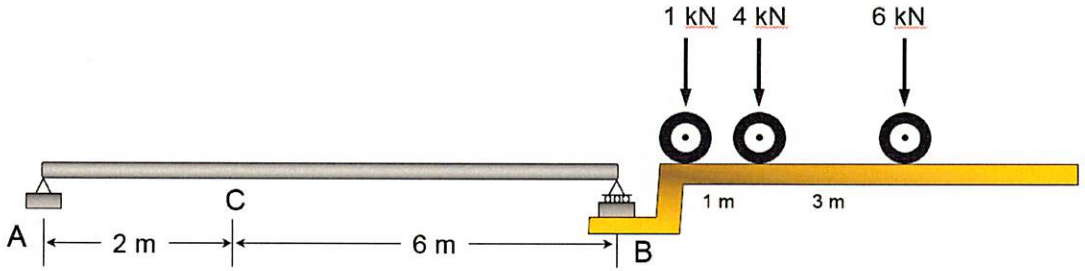
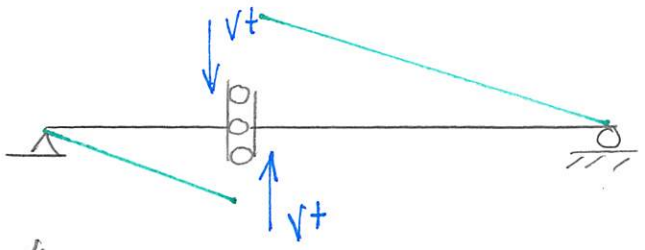
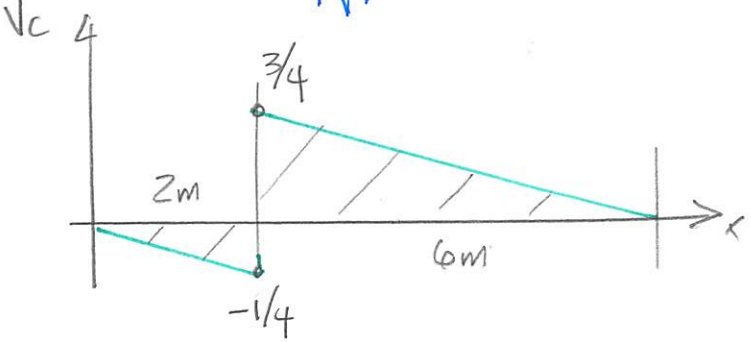
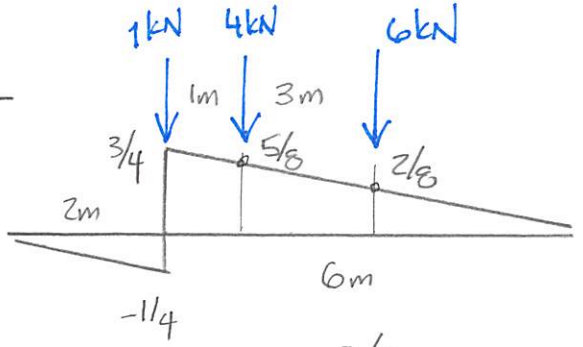
Example 6c-2: Determine the maximum shear created at point C in the beam below due to the wheel loads of a moving truck traveling from right to left.







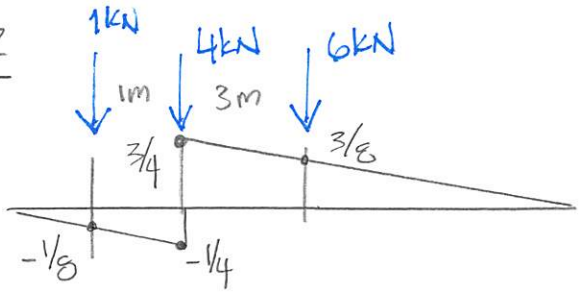
CASE 1



$$\text{SLOPE} = \frac{3/4}{6m} = \frac{1}{8}$$

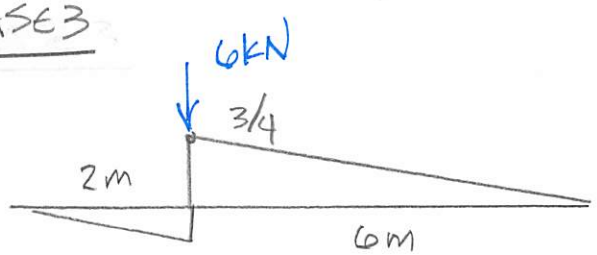
$$V_{C_1} = 1kN(3/4) + 4kN(5/8) + 6kN(2/8) = 4.75kN$$

CASE 2



$$V_{C_2} = 1kN(-1/8) + 4kN(3/4) + 6kN(3/8) = 5.125kN$$

CASE 3



$$V_{C_3} = 6kN(3/4) = 4.5kN$$

$$V_{C_{MAX}} = 5.125kN$$