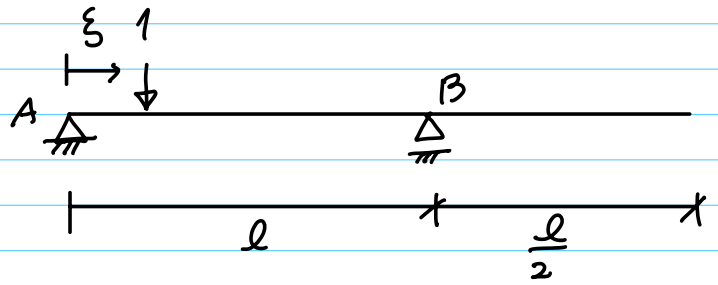
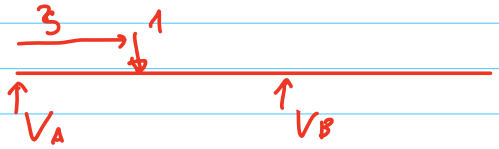
第12回 小テスト　Solution



場合わけして解く

1)　$0 \le \xi \le \ell$　（荷重がAとBの間）

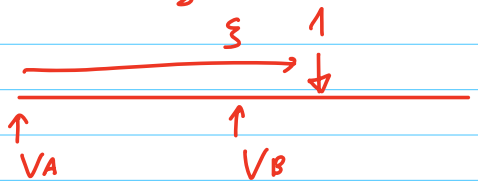


$\downarrow \Sigma F_y = -V_A - V_B + 1 = 0$　　$V_B = \frac{\xi}{\ell}$

$\circlearrowleft \Sigma M_A = -1 \cdot \xi + V_B \cdot \ell = 0$　　$V_A = \frac{\ell - \xi}{\ell}$

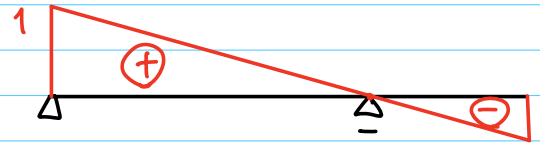
$V_A = 1 - V_B = \frac{\ell}{\ell} - \frac{\xi}{\ell}$

2)　$\ell \le \xi \le \frac{3}{2}\ell$



$\circlearrowleft \Sigma M_A = V_B \cdot \ell - 1 \cdot \xi = 0$　　$V_B = \frac{\xi}{\ell}$　　$V_A = \frac{\ell - \xi}{\ell}$

影響線 V_A



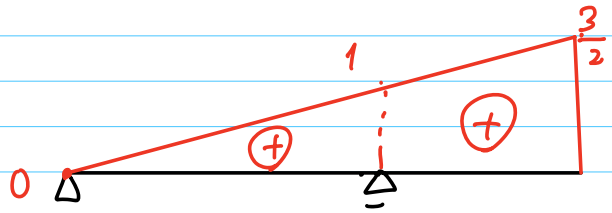
$V_A = \frac{l-\xi}{l}$

$\xi = 0 \quad V_A = \frac{l}{l} = 1$

$\xi = l \quad V_A = \frac{l-l}{l} = 0$

$\xi = \frac{3}{2}l \quad V_A = \frac{l-\frac{3}{2}l}{l} = \frac{l(-\frac{1}{2})}{l} = -\frac{1}{2}$

影響線 V_B



$V_B = \frac{\xi}{l}$

$\xi = 0 \quad V_B = 0$

$\xi = l \quad V_B = \frac{l}{l} = 1$

$\xi = \frac{3}{2}l \quad V_B = \frac{\frac{3}{2}l}{l} = \frac{3}{2}$