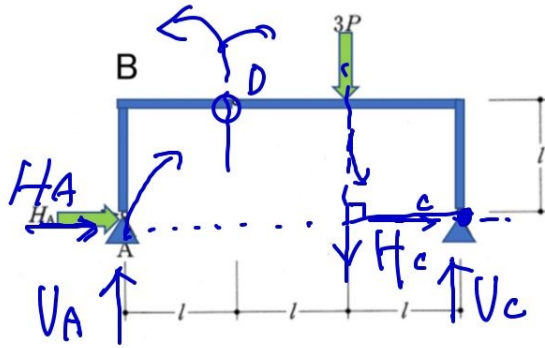


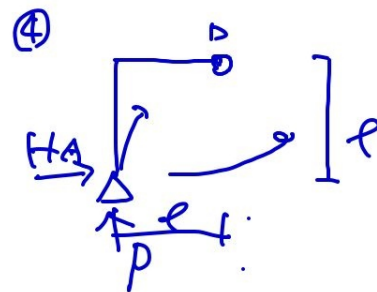
H24-No3

A点の水平反力HAを求める。更にB点の曲げモーメントを求める。



① $\Sigma X = 0$ より ② $\Sigma Y = 0$ より
 $H_A + H_c = 0$ ① $V_A + V_c - 3P = 0$ ②

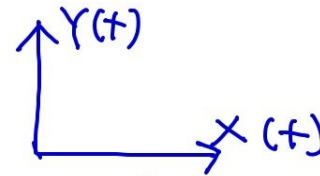
③ $\Sigma M_c = 0$
 $V_A \times 2l - 3P \times l = 0$
 $3V_A l - 3P l = 0$
 $3V_A l = 3P l$
 $V_A = P$
 ↓
 ②より $V_c = 2P$



④ $\Sigma M_D = 0$
 $-H_A \times l + P \times l = 0$
 $H_A = P$ → ①より $H_c = -P$

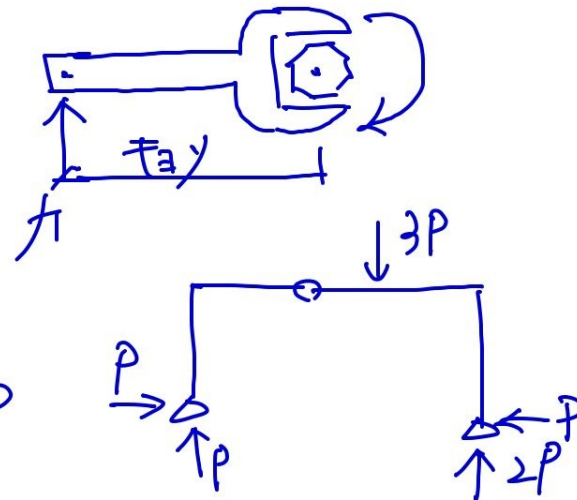
反力を求める

・反力の向きを仮定する(プラス方向)



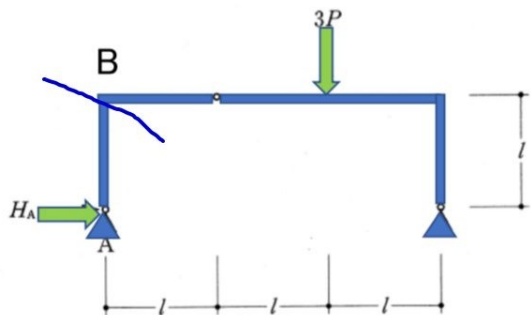
・力の合計式をたてる

① $\Sigma X = 0$
 ② $\Sigma Y = 0$
 ③ $\Sigma M = 0$ ④ $\Sigma M_{x_i} = 0$
 $E-x-z = (r_x + r_y)$



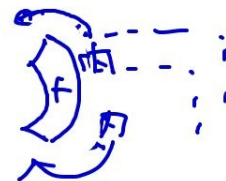
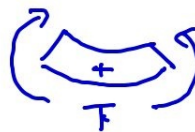
H24-No3

A点の水平反力 H_A を求める。更にB点の曲げモーメントを求める。



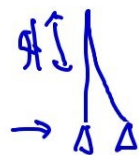
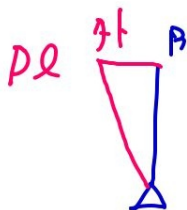
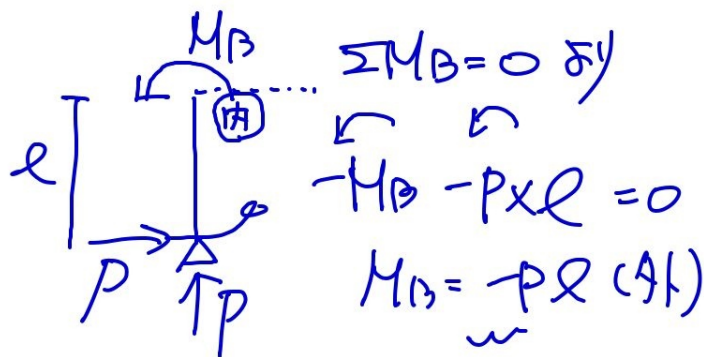
① 応力を求める位置での断面

② この断面に内力を \oplus に仮定



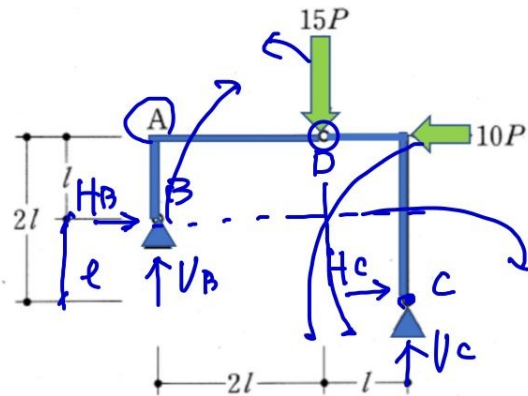
③ 力の合計式で求める

$$\Sigma M = 0$$



H21-No3

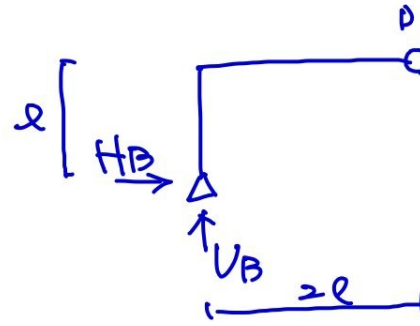
A点に生じる曲げモーメントを求める。



$$\begin{aligned} \Sigma X = 0 \text{ (右)} & \quad \Sigma Y = 0 \text{ (上)} \\ H_B + H_C - 10P = 0 & \quad V_B + V_C - 15P = 0 \end{aligned}$$

$$\begin{aligned} \Sigma M_C = 0 \text{ (右)} \\ H_B \times 2l + V_B \times 3l - 15P \times l - 10P \times 2l \\ H_B l + 3V_B l - 35Pl = 0 \quad \text{--- (1)} \end{aligned}$$

$$\begin{aligned} \Sigma M_A = 0 \text{ (右)} \\ -M_A - 14Pl = 0 \\ \underline{M_A = -14Pl \text{ (右)}} \end{aligned}$$



$$\begin{aligned} \text{(1) + (2)} \\ H_B l + 3V_B l - 35Pl = 0 \quad \text{--- (1)} \\ +) \quad -H_B l + 2V_B l = 0 \quad \text{--- (2)} \\ \hline 0 + 5V_B l - 35Pl = 0 \\ 5V_B l = 35Pl \\ \underline{V_B = 7P} \rightarrow \text{(2)に代入} \\ -H_B l + 2 \times 7P \times l = 0 \\ H_B l = 14Pl \\ \underline{H_B = 14P} \end{aligned}$$

$$\underline{M_A = 14Pl \text{ (右)}}$$

- 1 2Pl
- 2 4Pl
- ③ 14Pl
- 4 28Pl

$$\Sigma M_D = 0 \text{ (右)}$$

$$-H_B \times l + V_B \times 2l = 0$$

$$-H_B l + 2V_B l = 0 \quad \text{--- (2)}$$

2級-R03

図1の状態の曲げモーメント図は図2に示される、これを基に図3の状態の曲げモーメント図を選ぶ。

