

Opgave 3.1

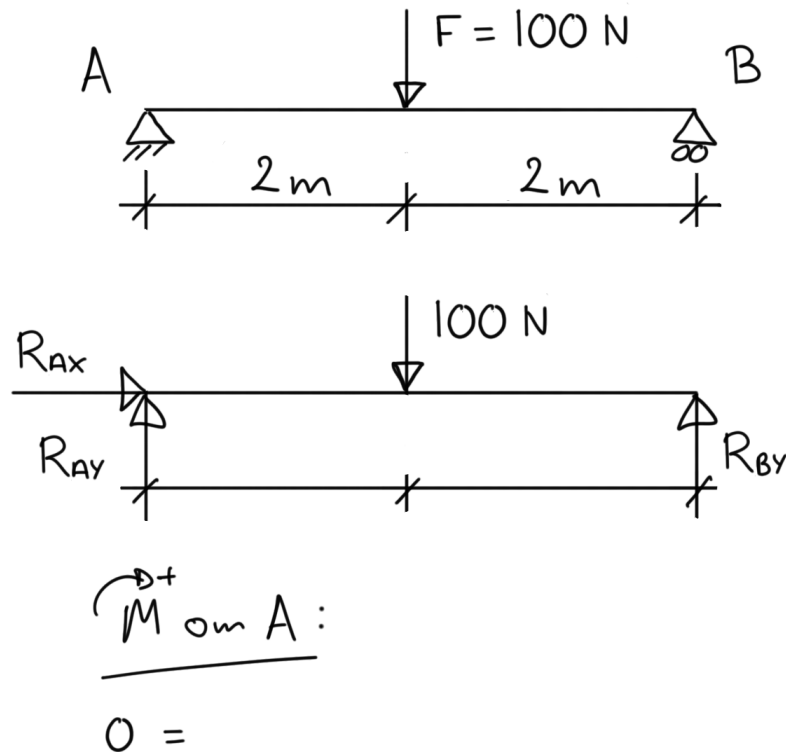
Opgave 3.1

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



Opgave 3.1

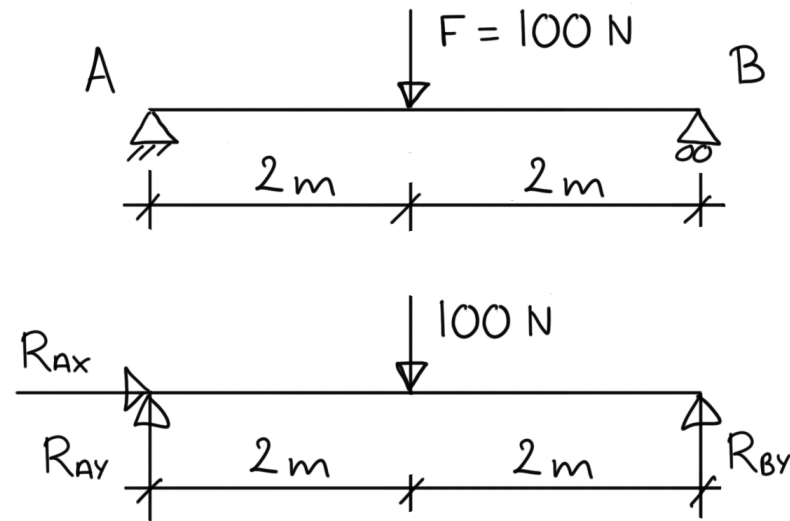
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 50 \text{ N}$$

$$R_{By} = 50 \text{ N}$$



$\overset{+}{\curvearrowright} M \text{ om A} :$

$$0 = 2 \text{ m} \cdot 100 \text{ N} - 4 \text{ m} \cdot R_{By}$$

$$4 \text{ m} \cdot R_{By} = 2 \text{ m} \cdot 100 \text{ N}$$

$$\frac{\cancel{4 \text{ m}} \cdot R_{By}}{\cancel{4 \text{ m}}} = \frac{\cancel{2 \text{ m}} \cdot 100 \text{ N}}{\cancel{4 \text{ m}}} \Rightarrow R_{By} = \frac{2}{4} \cdot 100 \text{ N} = \frac{1}{2} \cdot 100 \text{ N} = 50 \text{ N}$$

$$R_{Ay} = F - R_{By} = 100 \text{ N} - 50 \text{ N} = 50 \text{ N}$$



Opgave 3.2

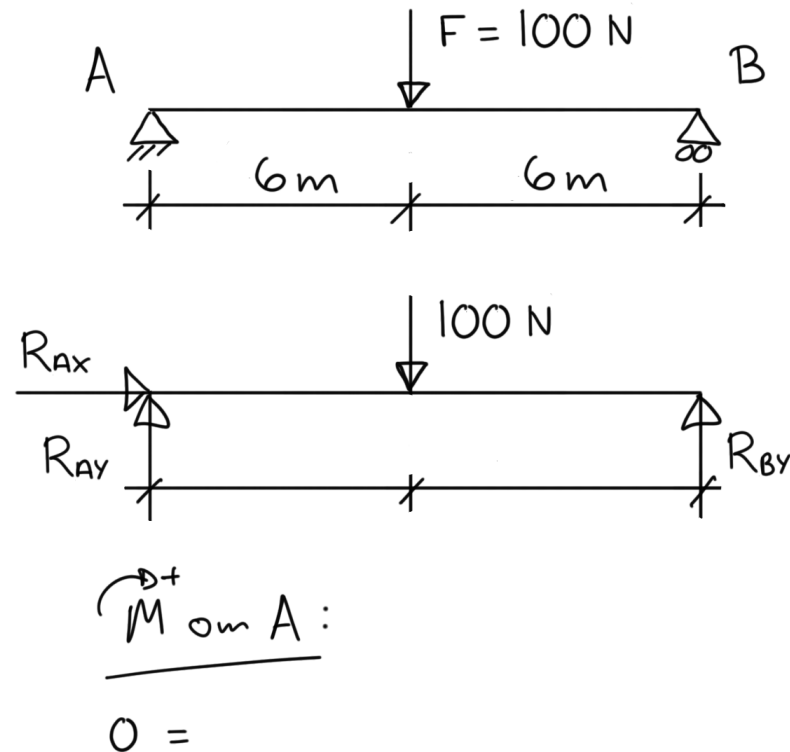
Opgave 3.2

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



Opgave 3.2

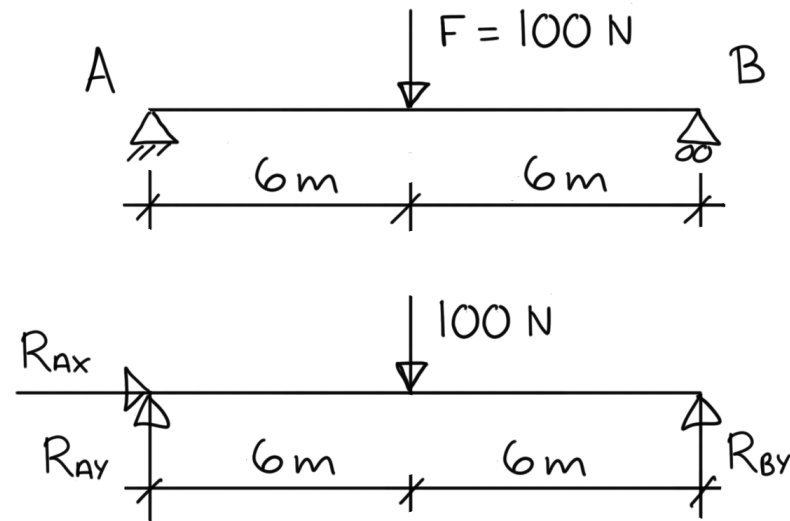
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 50 \text{ N}$$

$$R_{By} = 50 \text{ N}$$



Opgave 3.3

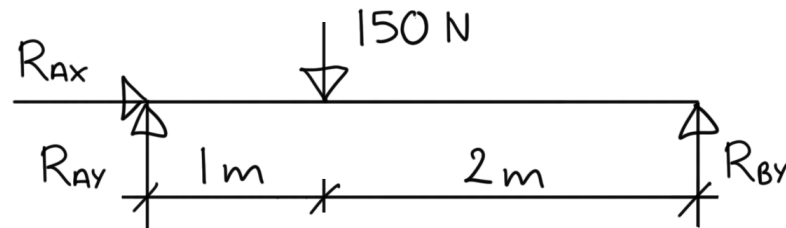
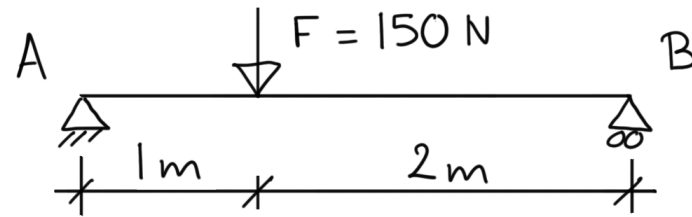
Opgave 3.3

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



$$\begin{aligned} & \overset{+}{\curvearrowright} M_{\text{om A}} : \\ & \hline & 0 = \end{aligned}$$



Opgave 3.3

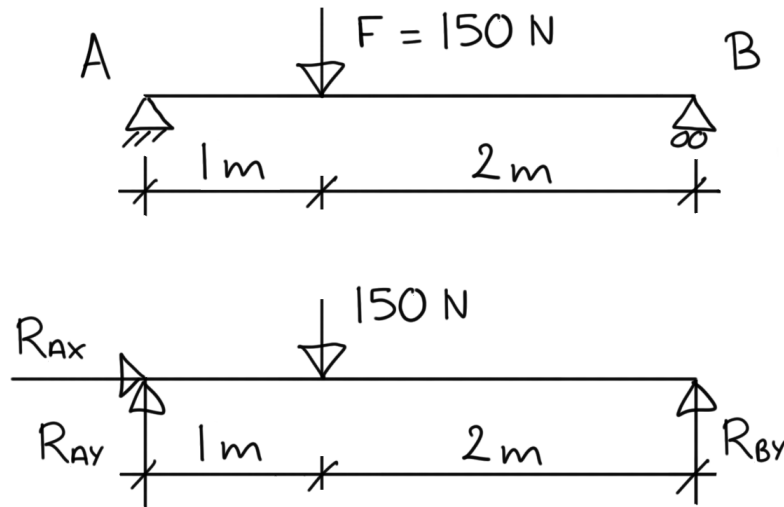
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 100 \text{ N}$$

$$R_{By} = 50 \text{ N}$$



Opgave 3.4

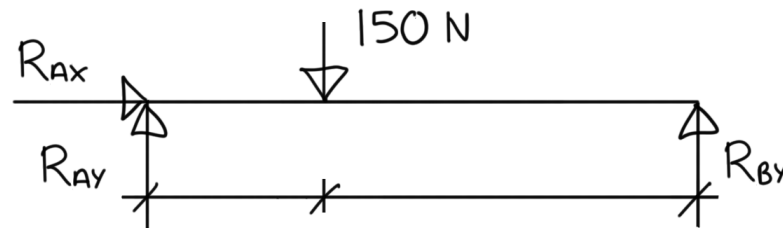
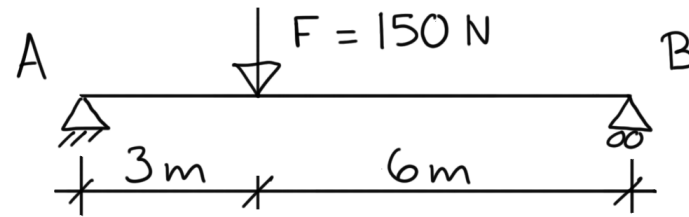
Opgave 3.4

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



$$\begin{aligned} & \overset{+}{\curvearrowright} M_{\text{om A}} : \\ & \hline & 0 = \end{aligned}$$



Opgave 3.4

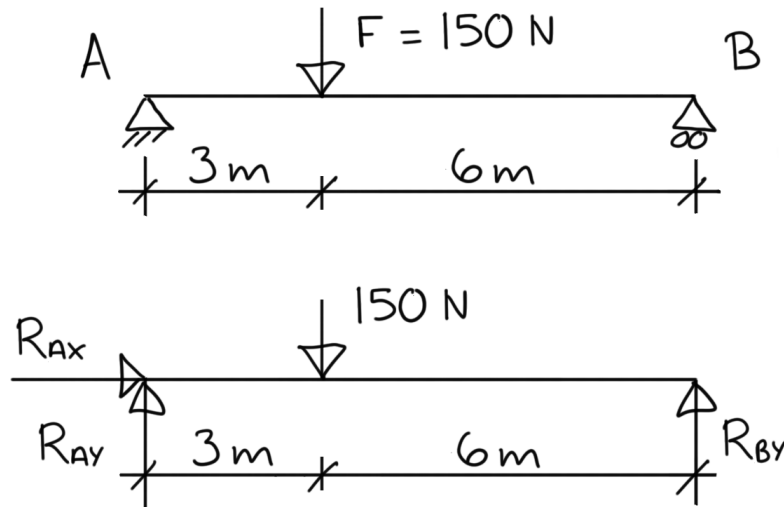
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 100 \text{ N}$$

$$R_{By} = 50 \text{ N}$$



Opgave 3.5

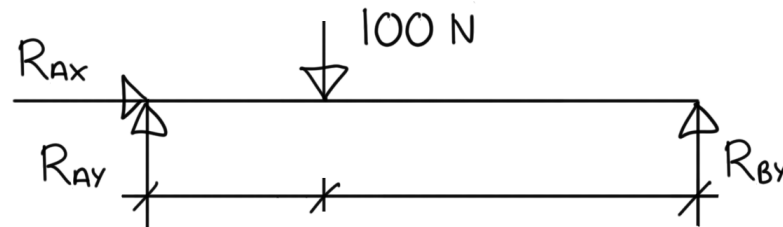
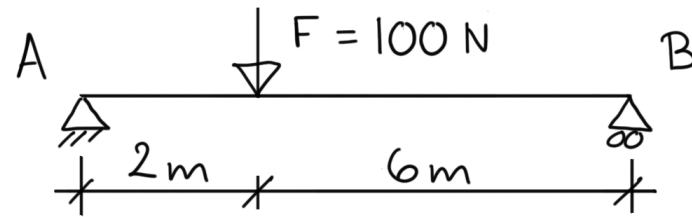
Opgave 3.5

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



$$\begin{aligned} & \curvearrowright^+ M_{\text{om A}} : \\ & \underline{\hspace{1cm}} \\ & 0 = \end{aligned}$$



Opgave 3.5

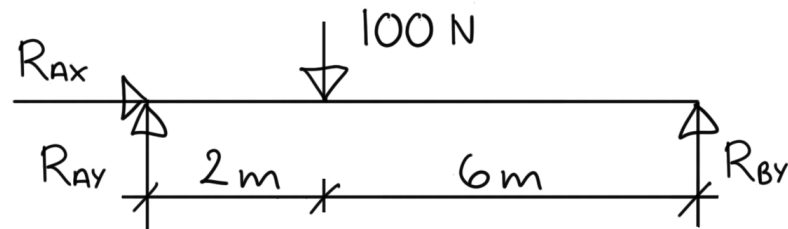
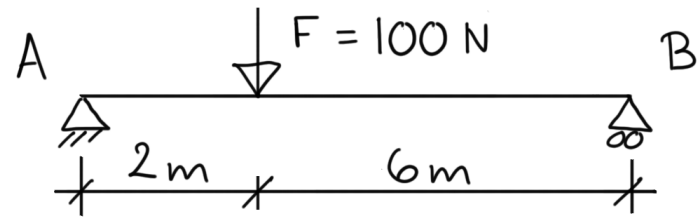
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 75\text{ N}$$

$$R_{By} = 25\text{ N}$$



Opgave 3.6

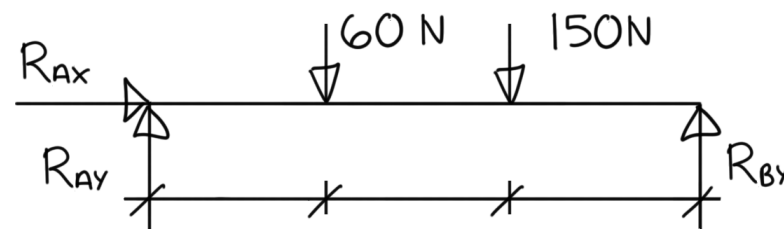
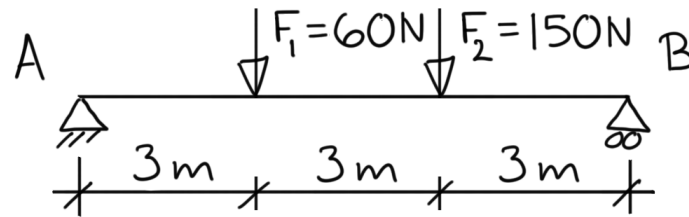
Opgave 3.6

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



$$\sum M_{\text{om A}} :$$

$$0 =$$



Opgave 3.6

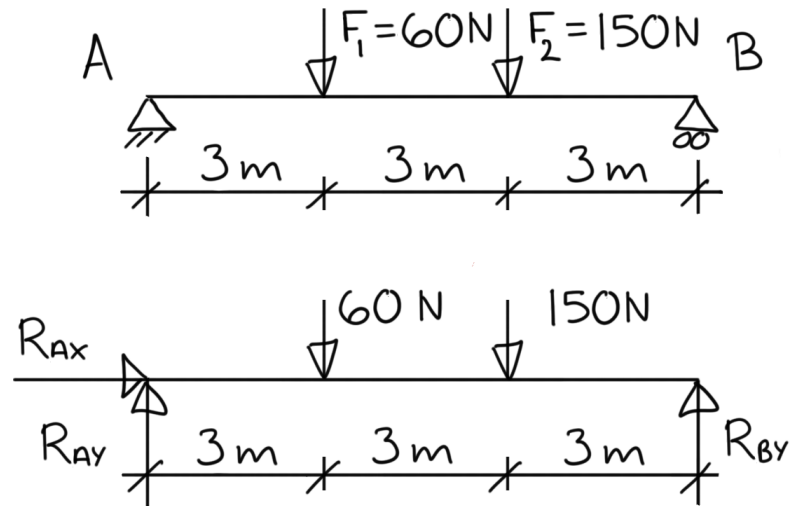
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 90 \text{ N}$$

$$R_{By} = 120 \text{ N}$$



Opgave 3.7

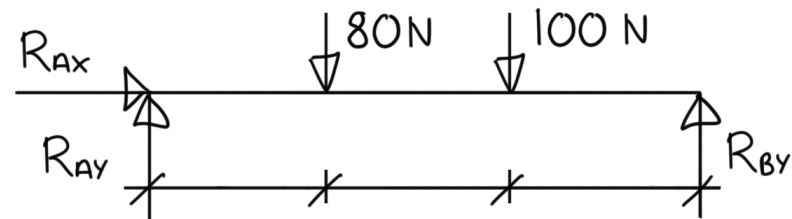
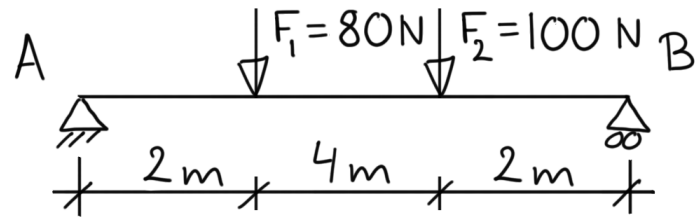
Opgave 3.7

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



$$\overset{+}{\curvearrowright} M_{\text{om A}}:$$

$$0 =$$



Opgave 3.7

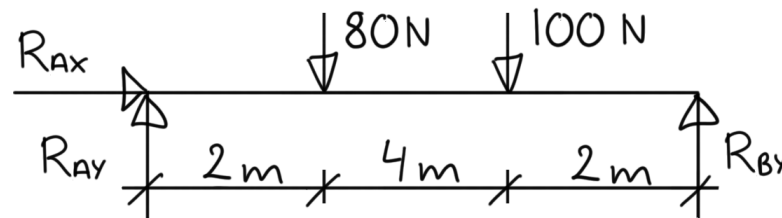
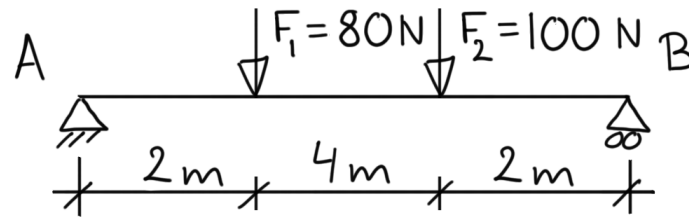
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 85\text{ N}$$

$$R_{By} = 95\text{ N}$$



Opgave 3.8

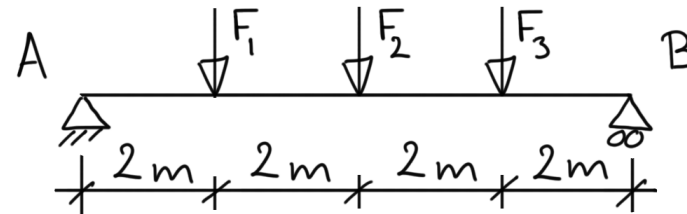
Opgave 3.8

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

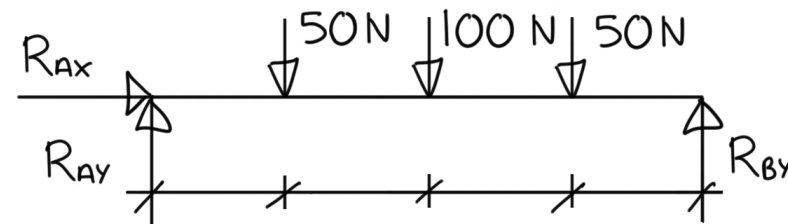
$$R_{By} =$$



$$F_1 = 50 \text{ N}$$

$$F_2 = 100 \text{ N}$$

$$F_3 = 50 \text{ N}$$



$$\sum M_{\text{om A}} :$$

$$0 =$$



Opgave 3.8

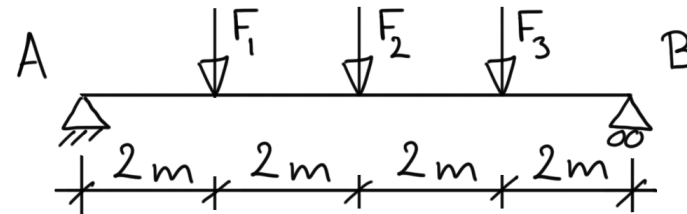
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 100 \text{ N}$$

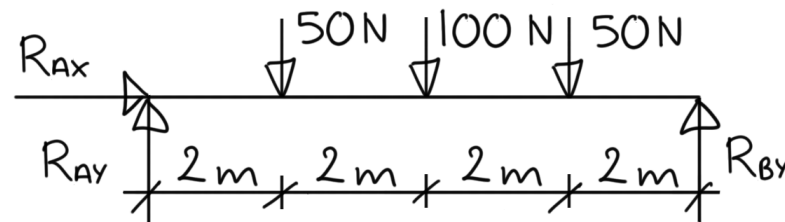
$$R_{By} = 100 \text{ N}$$



$$F_1 = 50 \text{ N}$$

$$F_2 = 100 \text{ N}$$

$$F_3 = 50 \text{ N}$$



Opgave 3.9

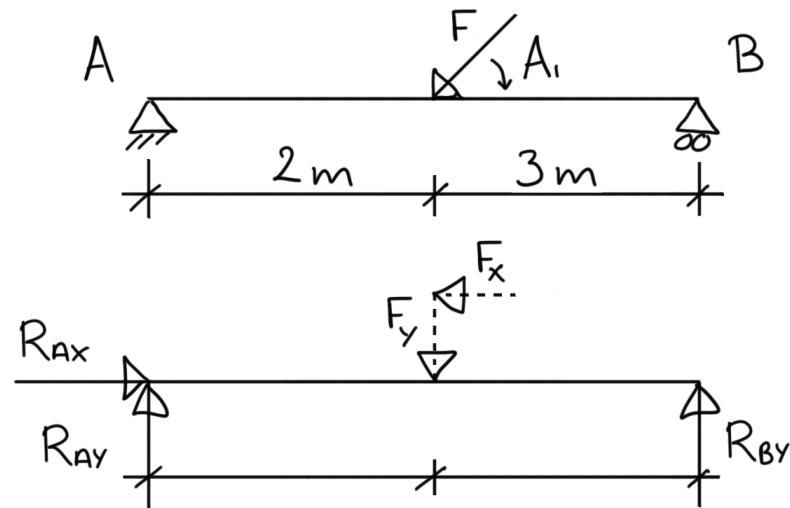
Opgave 3.9

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



$$F = 200 \text{ N}$$

$$A_1 = 30^\circ$$

$$\overset{D+}{\curvearrowright} M_{\text{om } A} :$$

$$0 =$$



Opgave 3.9

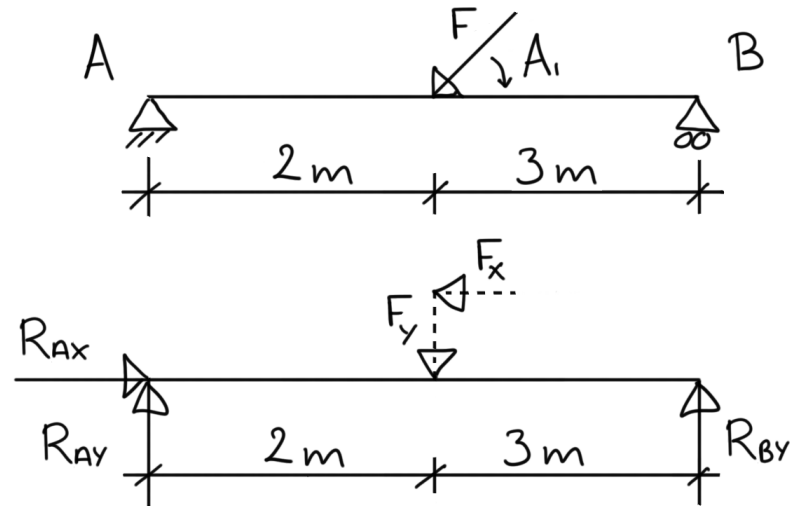
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = F_x = 173,2 \text{ N}$$

$$R_{Ay} = \frac{3}{5} \cdot F_y = 60 \text{ N}$$

$$R_{By} = \frac{2}{5} \cdot F_y = 40 \text{ N}$$



$$F = 200 \text{ N}$$

$$A_1 = 30^\circ$$

$\overset{+}{\curvearrowright} M_{\text{om A}} :$

$$0 = 2 \text{ m} \cdot F_y - 5 \text{ m} \cdot R_{By}$$

$$5 \text{ m} \cdot R_{By} = 2 \text{ m} \cdot F_y$$

$$\Rightarrow R_{By} = \frac{2}{5} \cdot F_y$$

$$R_{Ay} = F_y - \frac{2}{5} \cdot F_y = \frac{3}{5} \cdot F_y$$

$$R_{Ax} = F_x$$



Opgave 3.10

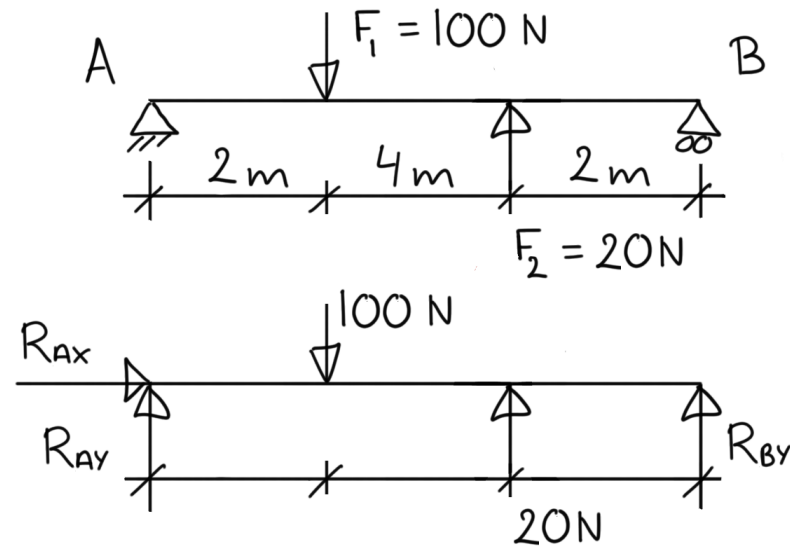
Opgave 3.10

Find reaktionerne

$$R_{Ax} =$$

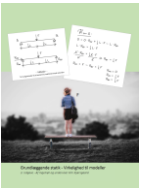
$$R_{Ay} =$$

$$R_{By} =$$



$\curvearrowright^+$
 $M_{\text{om A}} :$

$$0 =$$



Opgave 3.10

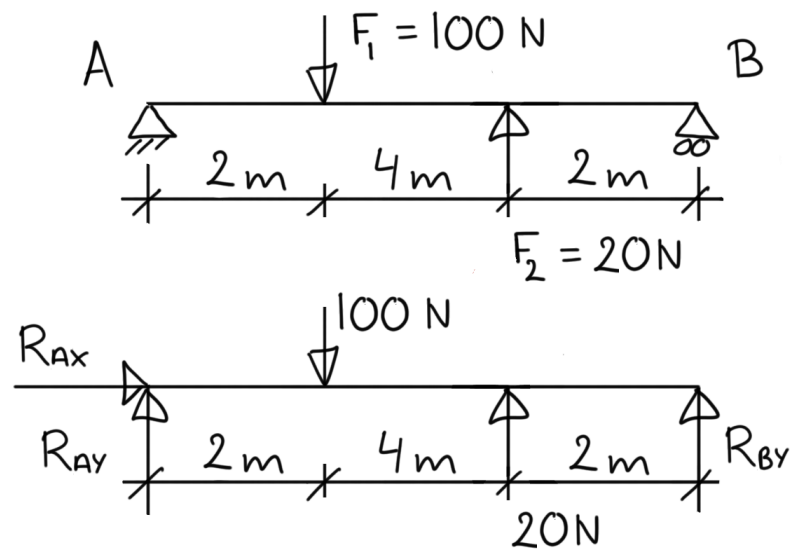
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 70\text{ N}$$

$$R_{By} = 10\text{ N}$$



Opgave 3.11

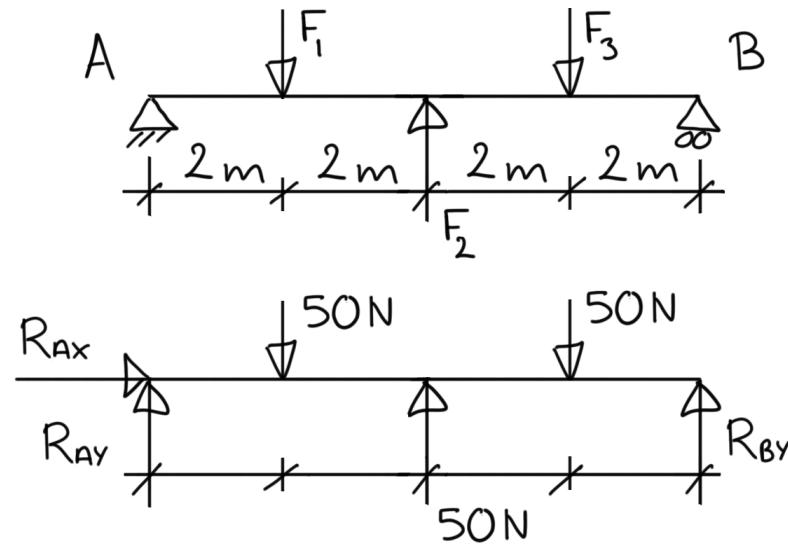
Opgave 3.11

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



$$F_1 = 50 \text{ N}$$

$$F_2 = 50 \text{ N}$$

$$F_3 = 50 \text{ N}$$

$$\sum M_{\text{om A}} :$$

$$0 =$$



Opgave 3.11

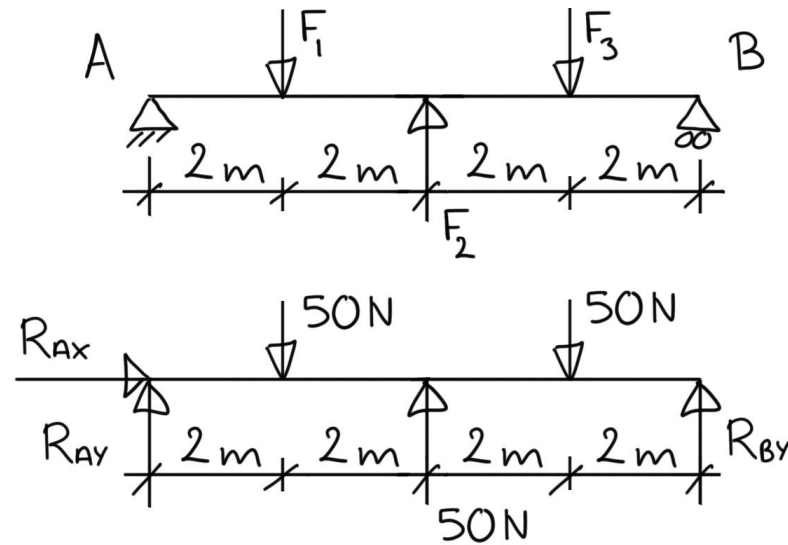
Se mere i afsnittet "Punktlast" i bogen

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 25\text{ N}$$

$$R_{By} = 25\text{ N}$$



$$F_1 = 50\text{ N}$$

$$F_2 = 50\text{ N}$$

$$F_3 = 50\text{ N}$$



Opgave 3.12

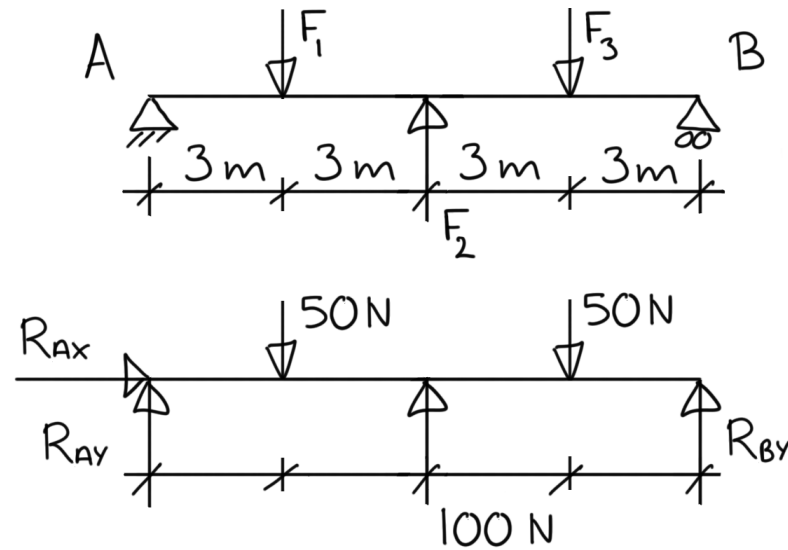
Opgave 3.12

Find reaktionerne

$$R_{Ax} =$$

$$R_{Ay} =$$

$$R_{By} =$$



$$\sum M_{\text{om } A} :$$

$$0 =$$

$$F_1 = 50 \text{ N}$$

$$F_2 = 100 \text{ N}$$

$$F_3 = 50 \text{ N}$$



Opgave 3.12

Se mere i afsnittet "Punktlast" i bogen

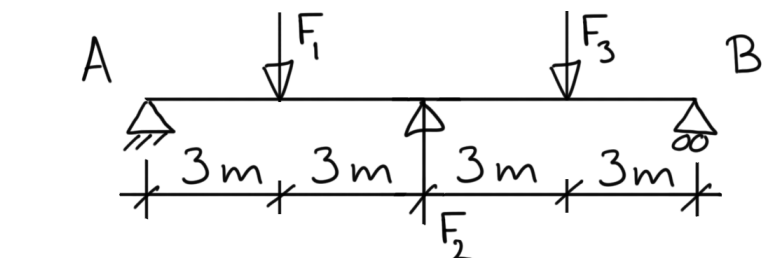
Kræfterne ophæver hinanden

Reaktionerne er:

$$R_{Ax} = 0$$

$$R_{Ay} = 0$$

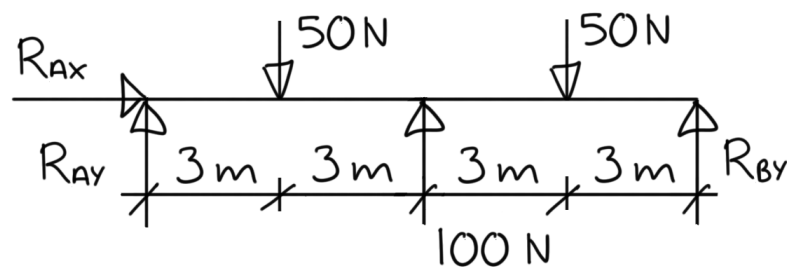
$$R_{By} = 0$$



$$F_1 = 50 \text{ N}$$

$$F_2 = 100 \text{ N}$$

$$F_3 = 50 \text{ N}$$



$\overset{D+}{\curvearrowright} M_{\text{om A}} :$

$$0 = 3 \text{ m} \cdot 50 \text{ N} - 6 \text{ m} \cdot 100 \text{ N} + 9 \text{ m} \cdot 50 \text{ N} - 12 \text{ m} \cdot R_{By}$$

$$12 \text{ m} \cdot R_{By} = 3 \text{ m} \cdot 50 \text{ N} - 6 \text{ m} \cdot 100 \text{ N} + 9 \text{ m} \cdot 50 \text{ N}$$

$$\Rightarrow R_{By} = \frac{1}{4} \cdot 50 \text{ N} - \frac{1}{2} \cdot 100 \text{ N} + \frac{3}{4} \cdot 50 \text{ N} = 0 \text{ N}$$

$$R_{Ay} = 50 \text{ N} - 100 \text{ N} + 50 \text{ N} - 0 \text{ N} = 0 \text{ N}$$

