

$$\curvearrowright + \Sigma M_{\text{left end}} = 0$$

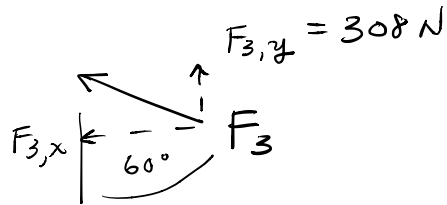
$$196 \text{ N} \cdot 500 \text{ mm} + 210 \text{ Nm} - F_{3,y} \cdot 1000 \text{ mm} = 0$$

$$1 \text{ m} = 1000 \text{ mm}$$

$$F_{3,y} \cdot 1 \text{ m} = 210 \text{ Nm} + 98 \text{ Nm}$$

$$F_{3,y} = 308 \text{ N}$$

GEOMETRY OF F_3



$$\cos 60^\circ = F_{3,y} / F_3$$

$$F_3 = F_{3,y} / \cos 60^\circ = 308 \text{ N} / \cos 60^\circ = 616 \text{ N}$$

$$F_{3,x}^2 + F_{3,y}^2 = F_3^2$$

$$F_{3,x}^2 + (308 \text{ N})^2 = (616 \text{ N})^2$$

$$F_{3,x}^2 = 284592 \text{ N}^2$$

$$F_{3,x} = 533.5 \text{ N}$$

$$\rightarrow \Sigma F_x = 0$$

$$- F_1 - 533.5 \text{ N} = 0$$

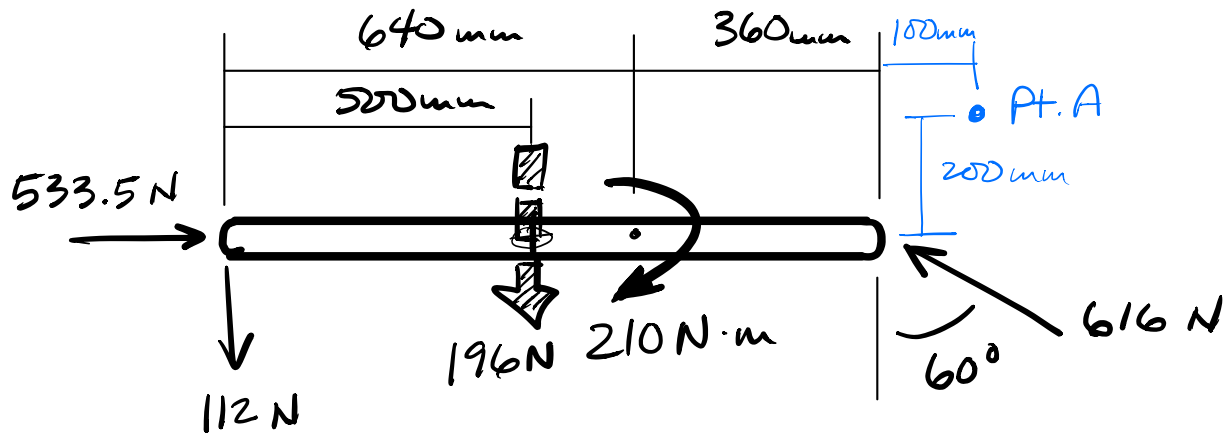
$$F_1 = -533.5 \text{ N} \quad \text{or} \quad 533.5 \text{ N} \rightarrow$$

$$+\uparrow \Sigma F_y = 0$$

$$F_2 - 196 \text{ N} + 308 \text{ N} = 0$$

$$F_2 = -112 \text{ N} \quad \text{or} \quad 112 \text{ N} \downarrow$$

SOLVED FBD



INDEPENDENT STATICS CHECK

$$\begin{aligned}
 \sum \vec{M}_{\text{AT PT A}} &= 0 \quad \left(\times \frac{1000 \text{ mm}}{1 \text{ m}} \right) \\
 - 533.5 \text{ N} (200 \text{ mm}) - 112 \text{ N} (1100 \text{ mm}) + 210 \text{ Nm} - 196 \text{ N} (600 \text{ mm}) \\
 + 308 \text{ N} (100 \text{ mm}) + 533.5 \text{ N} (200 \text{ mm}) &= 0 \\
 - 106,700 - 123,200 + 210,000 - 117,600 + 30,800 \\
 + 106,700 &= 0 \\
 0 &= 0 \quad \checkmark
 \end{aligned}$$

Even if NOT EXACTLY zero,
check % error. If $< 1\%$
Then answer is OK.