



$$A_x = 0 \quad \text{from } \sum F_x$$

$$A_y = \frac{1}{2}wL \quad \text{from } \sum F_y$$

$$M = \frac{wL^2}{3EI} \quad \text{from } \sum M_A$$

CONCLUDE SHAPE IS A PARABOLA
THEN

$$A = \frac{bh}{3}$$

SLOPE AT B = $\theta_B = \frac{\text{AREA OF } M/EI \text{ DIAGRAM}}{L}$

$$\theta_B = \frac{WL^2}{3EI} \cdot \frac{L}{3} = \frac{WL^3}{9EI}$$

DEFLECTION AT B = $\frac{\text{MOMENT ABOUT B OF } M/EI \text{ AREA}}{L}$

CENTROID = $\frac{3}{4}L$
OF PARABOLA

$$\delta_B = \frac{3WL^4}{36EI} = \frac{WL^4}{12EI}$$