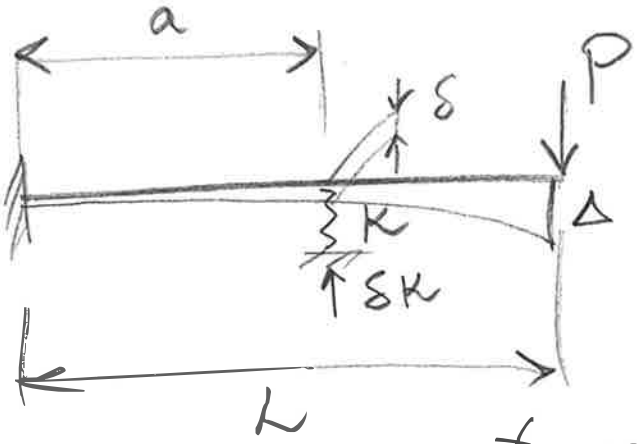
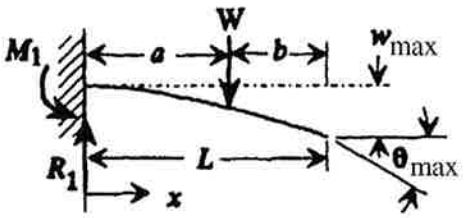


Find deflections at tip and at spring.

$$\begin{cases} \Delta = \dfrac{PL^3}{3EI} - \dfrac{(K\delta_K)(3a^2L - a^3)}{6EI} \\ \delta = \dfrac{P}{6EI}(-a^3 + 3a^2L) - \dfrac{(K\delta)a^3}{3EI} \end{cases}$$

unknown δ & a

Solve system of equations with TWO unknowns.

Type of Beam	Reactions	Deflection at Any Point x
1. 	$R_1 = W$ $M_1 = Wa$	For $x < a$, $\dfrac{W}{6EI}(-x^3 + 3x^2a)$ For $x \geq a$, $\dfrac{W}{6EI}(3a^2x - a^3)$