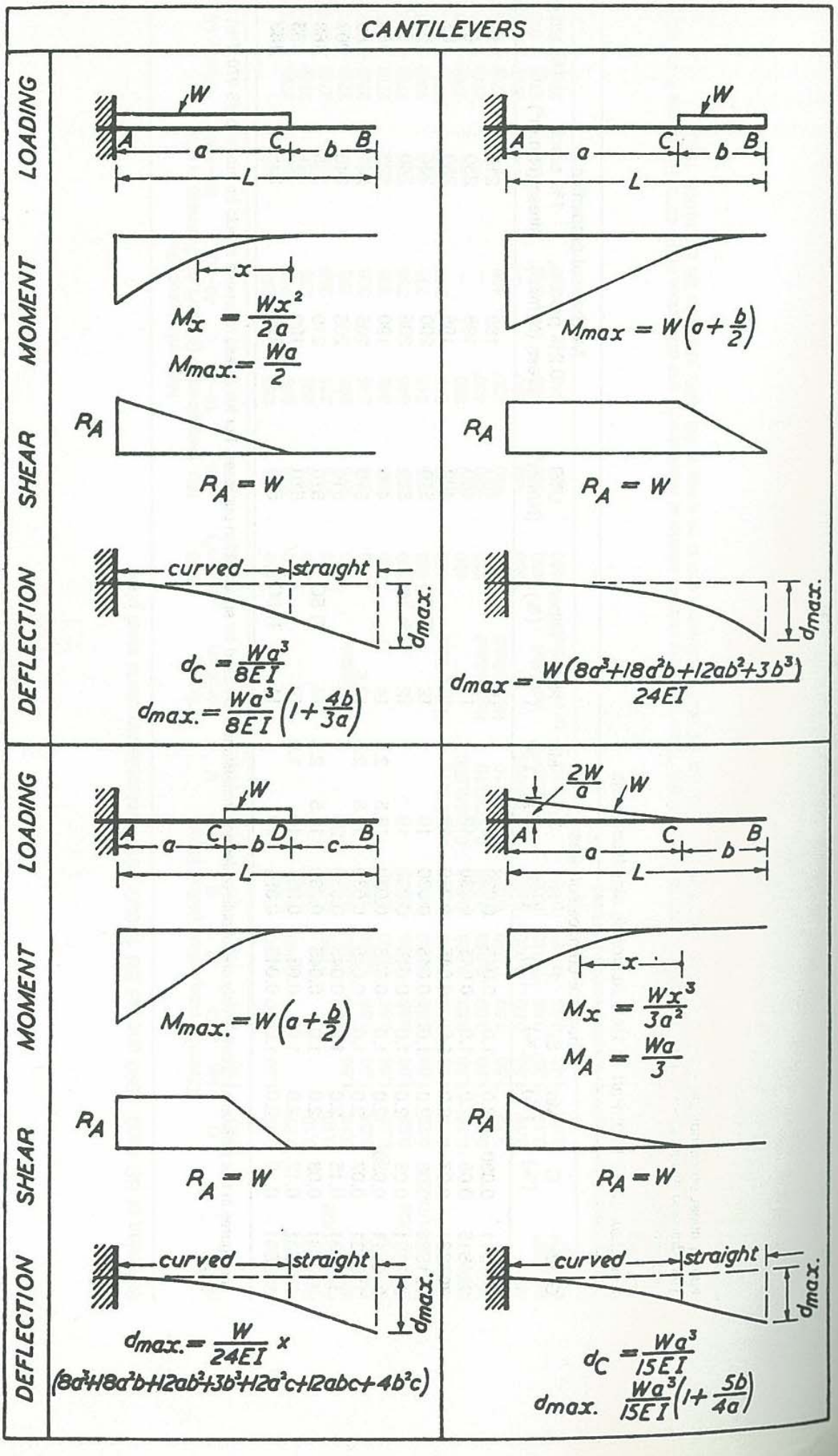
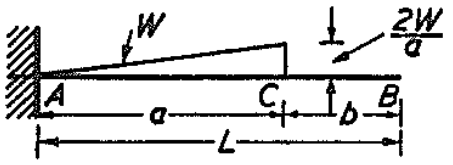
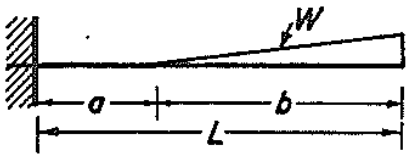
CANTILEVERS



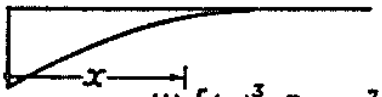
CANTILEVERS

LOADING



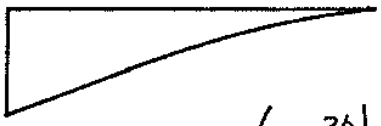


MOMENT



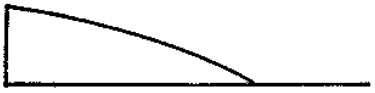
$$M_x = \frac{Wa}{3}\left[\left(\frac{x}{a}\right)^3 - \frac{3x}{a} + 2\right]$$

$$M_A = \frac{2Wa}{3}$$

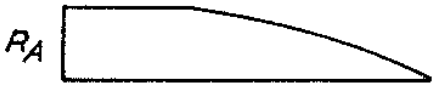


$$M_{max.} = W\left(a + \frac{2b}{3}\right)$$

SHEAR

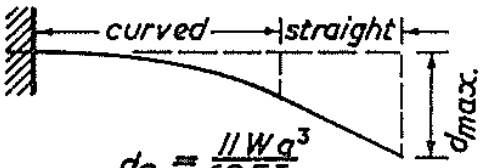


$$R_A = W$$



$$R_A = W$$

DEFLECTION

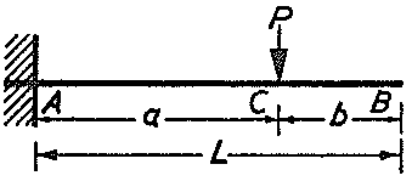


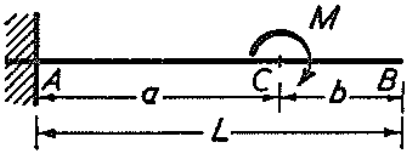
$$d_C = \frac{11Wa^3}{60EI}$$

$$d_{max.} = \frac{11Wa^3}{60EI}\left(1 + \frac{15b}{11a}\right)$$

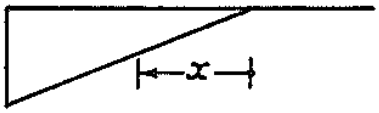
$$d_{max.} = \frac{W(20a^3 + 50a^2b + 40ab^2 + 11b^3)}{60EI}$$

LOADING





MOMENT



$$M_x = P.x$$

$$M_{max} = P.a$$

$$M_{max.} = M_x = M_C$$

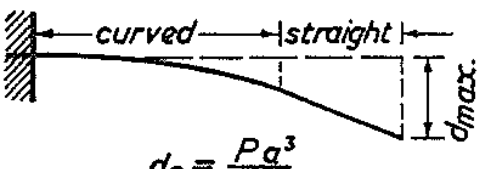
SHEAR

$$R_A = P$$

No shears

N.B. For anti-clockwise moments the deflection is upwards.

DEFLECTION



$$d_C = \frac{Pa^3}{3EI}$$

$$d_{max.} = \frac{Pa^3}{3EI}\left(1 + \frac{3b}{2a}\right)$$

$$d_C = \frac{M.a^2}{2EI}$$

$$d_{max.} = \frac{M.a^2}{2EI}\left(1 + \frac{2b}{a}\right)$$