

$$M = K(F) F d$$

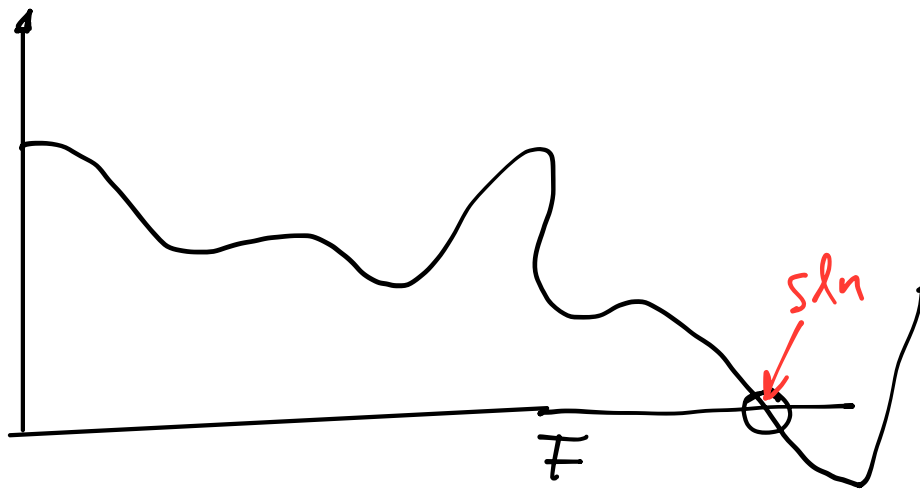
$$M = 40 \text{ N.m} \quad F = ? \quad d = 12 \text{ mm}$$

$$40 = (0.18 + 0.0005 F^{0.6}) F d$$

$$40 = (0.18 F d + 0.0005 F^{1.6})$$

$$f(F) = 40 - (0.18 F d + 0.0005 F^{1.6})$$

$$f(F) = 0$$



Newton-Raphson

$$f(x+h) \approx f(x) + hf'(x) + \dots = 0$$

$$f(x) + hf'(x) = 0$$

$$h = - \frac{f(x)}{f'(x)}$$

$$x_{\text{soln}} = x + h$$

$$/ X_0 = \text{supuesto}$$

$$/ X_1 = X_0 + h \quad h = -\frac{f(X_0)}{f'(X_0)}$$

$$/ X_2 = X_1 + h \quad h = -\frac{f(X_1)}{f'(X_1)}$$

$$/ X_3 = X_2 + h \quad h = -\frac{f(X_2)}{f'(X_2)}$$

⋮

$$M = K(F) \cdot \bar{F} \cdot d$$

$$f(F) = M - K(F) \cdot \bar{F} \cdot d = 0$$

$$\frac{df}{dF} = 0 - K(F) \cdot d - \frac{dK}{dF} \bar{F} \cdot d$$