

Hooke's law:

— Tension $\propto x$
↳ $\propto x$
↳ $= kx$

— This constant k depends on:

↳ The unstretched (natural) length
of the string or spring (L)

↳ The Modulus of elasticity (λ)

— $k = \lambda / L \Rightarrow T = \frac{\lambda x}{L}$

— This is what is called Hooke's law