HOOKE'S LAW

$$T = \frac{\lambda x}{l}$$

L = natural length

λ = modulus of elasticity

x = extension of string/spring

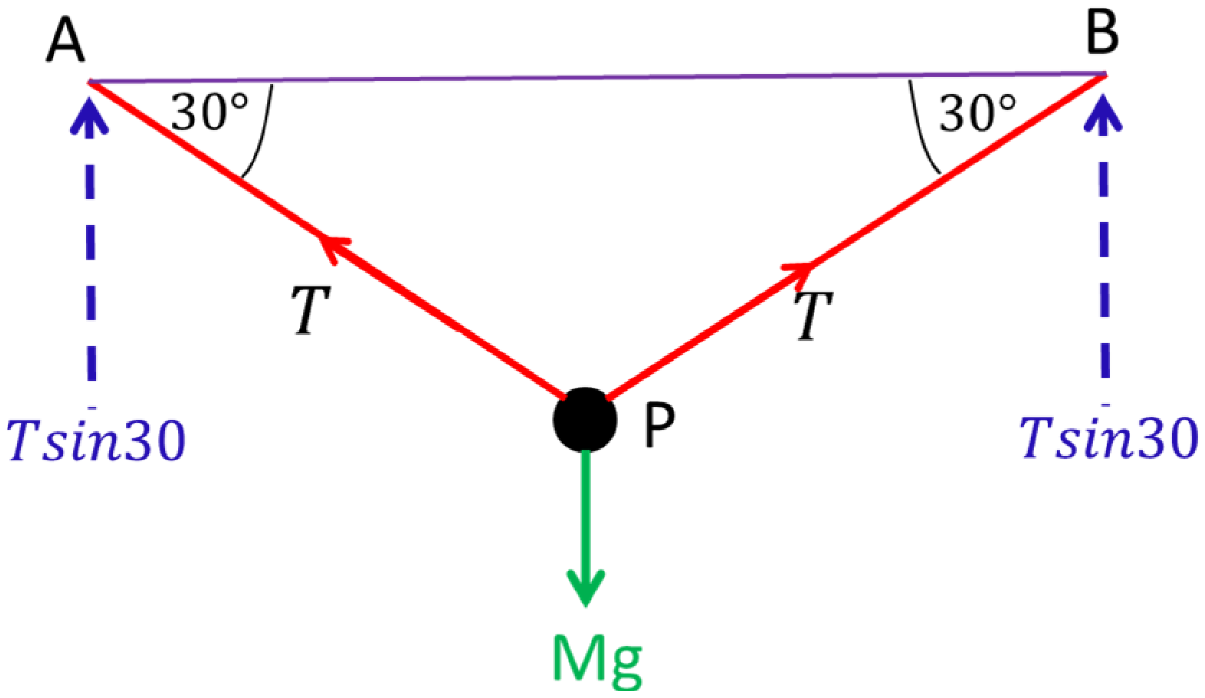
ELASTIC POTENTIAL ENERGY

$$T = \frac{\lambda x^2}{2l}$$

Hooke's Law and F = ma is good for equilibrium, acceleration and forces.

Elastic energy is good for distance travelled and velocity.

Spring/Springs at an Angle



Resolve Vertically

$$2T\sin 30 = mg$$

DYNAMICS

$F = ma$

Max displacement $V=0$

Max velocity $a=0$

CONSERVATION OF ENERGY

Initital Energy = Final Energy

Work in	Work out
+ Initial K.E.	+ Final K.E.
+ Initial G.P.E.	+ Final G.P.E.
+ Initial E.P.E.	+ Final E.P.E.

Work in	Work out
$+\ \frac{1}{2}mu^2$	$+\ \frac{1}{2}mv^2$
$+\ mgh$	$+\ mgh$
$+\ \frac{\lambda x^2}{2l}$	$+\ \frac{\lambda x^2}{2l}$

Work Out = Resistance Force x Distance

Work In = Engine Force x Distance