

GRAVITATIONAL POTENTIAL ENERGY

Question 1

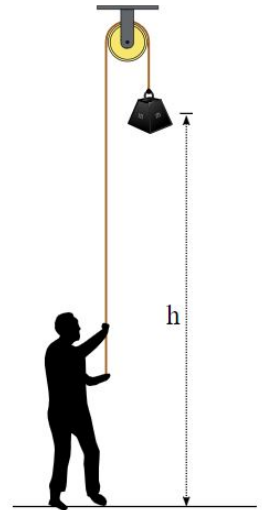
A person raises a 40kg mass a height of 5m above the ground.
Calculate the masses gravitational potential energy (E_{gp}).

$$E_{gp} =$$

$$m =$$

$$g =$$

$$h =$$



Question 2

A person raises a 40kg mass a height (h) above the ground.
Calculate the height (h), given the masses gravitational potential energy (E_{gp}) is 1800 Joules

$$E_{gp} =$$

$$m =$$

$$g =$$

$$h =$$

Question 3

A person raises a mass (m) a height of 5m above the ground.
Calculate the mass (m), given the masses gravitational potential energy (E_{gp}) is 2500 Joules.

$$E_{gp} =$$

$$m =$$

$$g =$$

$$h =$$

KINETIC ENERGY

Question 1

A rocket of mass 5 tonne has a speed of 100 m/s.
Calculate the rocket's kinetic energy (E_k).

$$E_k =$$

$$m =$$

$$v =$$



Question 2

A rocket of mass 2 tonne has a kinetic energy (E_k) of 2.5 MJ.
Calculate the speed of this rocket?

$$E_k =$$

$$m =$$

$$v =$$

Question 3

A rocket of unknown mass travels with a speed of 1000 km/h and has a kinetic energy (E_k) of 386.42 MJ.
Calculate the mass of this rocket in tonnes?

$$E_k =$$

$$m =$$

$$v =$$

STRAIN POTENTIAL ENERGY

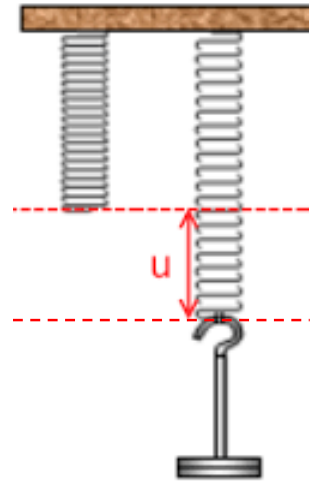
Question 1

A spring of spring constant (k) of 500 N/m, is extended by 20 cm. Calculate the spring's strain potential energy (E_{sp}).

$$E_{sp} =$$

$$k =$$

$$\Delta x =$$



Question 2

A spring of spring constant (k) of 500 N/m, is extended by an unknown amount (Δx). Given the spring's strain potential energy (E_{sp}) is 40 J, calculate the extension (Δx).

$$E_{sp} =$$

$$k =$$

$$\Delta x =$$

Question 3

A spring of unknown spring constant (k), is extended (Δx) by 50 cm. Given the spring's strain potential energy (E_{sp}) is 25 J, calculate the spring constant (k).

$$E_{sp} =$$

$$k =$$

$$\Delta x =$$