

KINETIC AND POTENTIAL ENERGY WORKSHEET

Name: _____

Determine whether the objects in the following problems have kinetic or potential energy. Then choose the correct formula to use:

$$\mathbf{KE} = \frac{1}{2} m v^2$$
$$\mathbf{PE} = \text{mass} \times \text{gravitational acceleration (9.8m/s}^2\text{)} \times \text{height} \quad \mathbf{OR} \quad \text{Weight} \times \text{Height}$$

Energy= joules
Weight= Newton
Mass= kilograms
Velocity= m/s

Gravitational acceleration= (9.8 m/s²)

1. You serve a volleyball with a mass of 2.1 kg. The ball leaves your hand with a speed of 30 m/s. The ball has _____ energy. Calculate it.

2. A baby carriage is sitting at the top of a hill that is 21 m high. The carriage with the baby weighs 12 N. The carriage has _____ energy. Calculate it.

3. A car is traveling with a velocity of 40 m/s and has a mass of 1120 kg. The car has _____ energy. Calculate it.

4. A cinder block is sitting on a platform 20 m high. It weighs 79 N. The block has _____ energy. Calculate it.

5. There is a bell at the top of a tower that is 45 m high. The bell weighs 190 N. The bell has _____ energy. Calculate it.