**Calculating Energy** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Gravitational Potential Energy Questions:**

1. A baby carriage is sitting at the top of a hill that is 21m high. The carriage with the baby weighs 12kg. How much gravitational potential energy does the carriage and baby have?

Formula: PE = mgh

m= \_\_\_\_, g=\_\_\_\_, h=\_\_\_\_

Solve:

2. A brick is sitting on a platform 20m high. It weighs 2kg. How much gravitational potential energy does the brick have?

Formula: PE = mgh

m= \_\_\_\_, g=\_\_\_\_, h=\_\_\_\_

Solve:

3. There is a bell at the top of a tower that is 45m high. The bell weighs 90kg. How much gravitational potential energy does the bell have?

Formula: \_\_\_\_\_\_\_\_

m= \_\_\_\_, g=\_\_\_\_, h=\_\_\_\_

Solve:

**Kinetic Energy Questions:**

1. You serve a volleyball with a mass of 2.1kg. The ball leaves your hand with a speed of 30m/s. How much kinetic energy does the ball have?

Formula: KE =

m= \_\_\_\_, v=\_\_\_\_

Solve:

2. A car is traveling with a velocity of 40m/s and has a mass of 1120kg. How much kinetic energy does the car have?

Formula: KE =

m= \_\_\_\_, v=\_\_\_\_

Solve:

3. If a 25kg object is moving at a velocity of 5m/s, how much energy does it have?

Formula: \_\_\_\_\_\_

m= \_\_\_\_, v=\_\_\_\_

Solve:

**Different Energy Questions:**

1. If a 25kg object is moving at a velocity of 10m/s, how much energy does this object have?

Type of energy: \_\_\_\_\_\_\_\_\_\_

Formula: \_\_\_\_\_\_\_\_\_\_

Solve:

2. What is the kinetic energy of a 25kg object moving at a velocity of 2.5m/s?

Type of energy: \_\_\_\_\_\_\_\_\_\_

Formula: \_\_\_\_\_\_\_\_\_\_

Solve:

3. What is the kinetic energy of a 150 kg object moving at a velocity of 100 m/s?

Type of energy: \_\_\_\_\_\_\_\_\_\_

Formula: \_\_\_\_\_\_\_\_\_\_

Solve:

4. What is the energy of a 150kg object suspended 5 m above the earth’s surface?

Type of energy: \_\_\_\_\_\_\_\_\_\_

Formula: \_\_\_\_\_\_\_\_\_\_

Solve:

5. What is the energy of a 2.5 kg object that is 300 m above the surface of the earth?

Type of energy: \_\_\_\_\_\_\_\_\_\_

Formula: \_\_\_\_\_\_\_\_\_\_

Solve:

6. What is the energy of a 1500 kg object moving at a velocity of 10 m/s?

Type of energy: \_\_\_\_\_\_\_\_\_\_

Formula: \_\_\_\_\_\_\_\_\_\_

Solve:

Extension: A roller coaster is stationary at the top of a 72m hill and weighs 200kg. How much potential energy does the coaster have? What about kinetic energy?