

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Block: \_\_\_\_\_

## Potential Energy

1) John has an object suspended in the air. It has a mass of 50 kilograms and is 50 meters above the ground. Calculate the objects potential energy.

2) Ms. Morrin drops a box from 10 m up. She knows it has 50 J of energy. How much did the box weigh?

3) Maria is holding a ball from a height of 2 m that has the potential energy of 10 J, calculate the mass of the ball.

4) Brian has an object suspended in the air. It has a mass of 100 kg and is 25 meters above the ground. What is the object's potential energy?

5) The mass of the rock is 1220 kg. It had 400 J of potential energy when it rolled down the hill. Calculate the height.

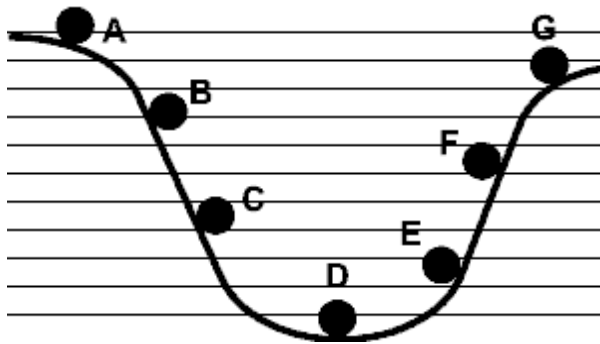
6) Calculate the potential energy of a rock with a mass of 55 kg while sitting on a cliff that is 27 m high.

7) What distance is a book from the floor if the book contains 196 Joules of potential energy and has a mass of 5 kg?

8) An automobile is sitting on a hill which is 20 m higher than ground level. Find the mass of the automobile if it contains 362,600 J of potential energy.

9) There is a bell at the top of a tower that is 45 m high. The bell weighs 1900 g. Calculate the potential energy.

10) The letters are positions of a ball in a snowbank. Rank the following positions from least to greatest amount of stored potential energy. Explain your answer.



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## **Kinetic Energy**

1) Dayton swung a bat which had a mass of 2 kg at a velocity of 45 m/s. How many joules of kinetic energy did the bat have?

2) Riley swung a tennis racket of mass 1.5 kg at a velocity of 55 m/s. How much kinetic energy does the racket have?

3) A golf pro swings her driver which weighs .75 kg at a velocity of 60 m/s. Calculate the kinetic energy of the club.

4) Calculate the kinetic energy of a running back that has a mass of 80 kg and is running at a velocity of 8 m/s.

5) Sam serves a volleyball with a mass of 2.1 kg. The ball leaves his hand with a speed of 30 m/s. How much energy does the ball have?

6) What is the mass of a car if it is moving at 30 m/s with 225 kJ of kinetic energy?

7) Ms. Morrin throws a textbook at a noisy student. If it has 25 J of kinetic energy and a speed of 5 m/s, how much does the textbook weigh?

8) A hockey player has 4500 J of kinetic energy and a mass of 90kg. How fast is the player moving?

9) Brady runs down the hall to get to class. He has a kinetic energy of 875 J and a mass of 70 kg. How fast was he running?

10) Two objects are being lifted in the air. The first has a mass of 2 kg and 13 J of kinetic energy. The second has a mass of 1.5 kg and 12 J of energy. Which is moving faster?