

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

### POTENTIAL AND KINETIC ENERGY PRACTICE PROBLEMS

Show all of your math when answering the problems below. Write directly on this page.

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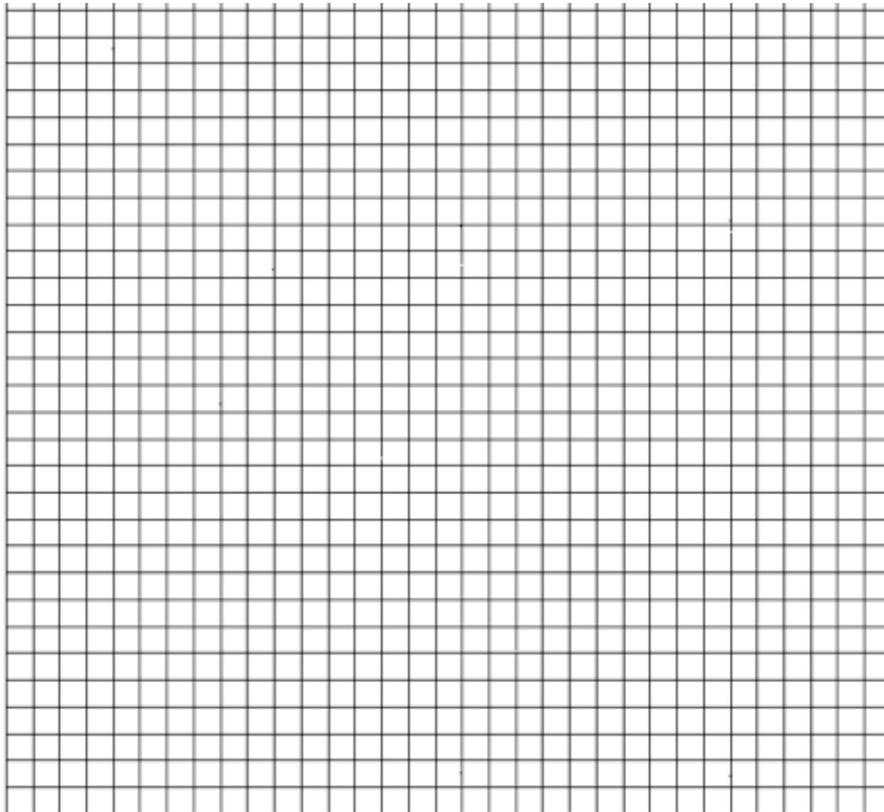
1. A 1 kg rock is at a height of 100 meters.

a. What is the rock's gravitational potential energy at 100 meters high?

b. Calculate the rock's gravitational potential energy at 50 m, 20 m, 1 m, and 0 m high. Put the answers in the data table below.

Height (m)	Potential energy (J)

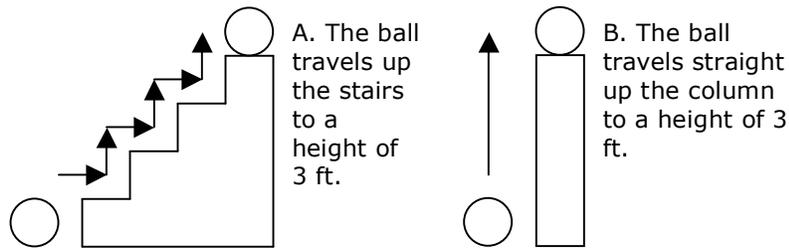
c. Make a graph of height versus energy.



d. What can you conclude about the gravitational potential energy of the rock as height is changed? Explain how you know that using evidence from your graph.

2. A car is lifted a certain distance in a service station and therefore has potential energy relative to the floor. If it were lifted twice as high, how much potential energy would it have?
3. A 60-kg person walks from the ground to the roof of a 74.8 m tall building. How much gravitational potential energy does she have at the top of the building?

4. In which scenario below does the ball have more gravitational potential energy when sitting at the top? Why?



5. A 70-kg man is walking at a speed of 2.0 m/s. What is his kinetic energy (energy is measured in Joules)?

6. A 1400-kg car is moving at a speed of 25 m/s. How much kinetic energy does the car have?

7. Consider a ball thrown straight up in the air. At what position is its kinetic energy a maximum? Where is its gravitational potential energy a maximum?