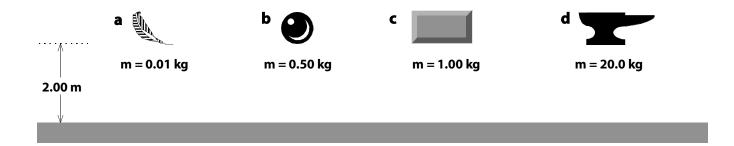
## PhyzJob: Potential



## I. Gravitational Potential



- 1. Calculate the gravitational potential energy of each object shown (all are in the earth's gravitational field—use  $g = 10 \text{ m/s}^2$ ).
- a.

b.

c.

d.

- 2. Gravitational potential indicates the amount of potential energy each unit of mass has at a given point in a gravitational field. Calculate the gravitational potential of each object shown.
- a.

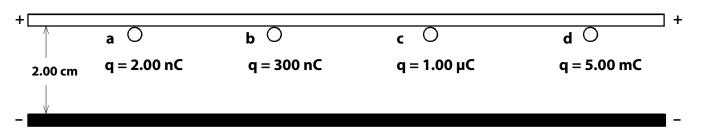
b.

c.

d.

3. Therefore, each kilogram of mass has \_\_\_\_\_\_ of potential energy when placed at 2 m above the surface in the earth's gravitational field, and therefore loses \_\_\_\_\_ of potential energy as it falls 2 m.

## II. Electric Potential



- 4. Calculate the electric potential energy of each charge shown (all are immersed in a 1,000,000 N/C electric field).
- a.

b.

c.

d.

- 5. Electric potential indicates the amount of potential energy each unit of charge has at a given point in an electric field. Calculate the electric potential of each charge shown.
- a.

b.

c.

d.

- 6. Therefore, each coulomb of charge has \_\_\_\_\_\_ of potential energy when placed at the positive plate (2 cm from the negative plate), and therefore loses \_\_\_\_\_ of potential energy as it "falls" across that 2 cm gap.
- 7. If a single coulomb of charge passes from the + terminal to the terminal of a 12 V battery, how much energy does it give up?

1a.0.2 J b.10 J c.20 J d.400 J 2 a-d.20 J/kg 3.20 J; 20 J 4a.40 µJ b.6 mJ c.20 mJ d.100 J 5 a-d.20 kV 6.20 kJ; 20 kJ 7.12 J