



Name _____ Class _____ Date _____

1 How much **work** is required to move a **single electron** through a **potential difference of 100 volts**?

- A 1.6×10^{-21} J
- B 1.6×10^{-19} J
- C 1.6×10^{-17} J
- D 1.0×10^2 J

2 A constant force of **1900 newtons** is required to keep an automobile having a mass of 1.0×10^3 kilograms moving at a constant speed of **20 meters per second**. The **work done** in moving the automobile a distance of 2.0×10^3 meters is

- A 2.0×10^4 J
- B 3.8×10^4 J
- C 2.0×10^6 J
- D 3.8×10^6 J



3 What is the **maximum height** to which a **1200-watt motor** could **lift** an object weighing **200 newtons** in **4.0 seconds**?

- A 0.67 m
- B 1.5 m
- C 6.0 m

4 A spring of negligible mass has a spring constant of 50 newtons per meter. If the spring is **stretched 0.40 meter** from its equilibrium position, how much **potential energy** is stored in the spring?

- A 20 J
- B 10 J



PREVIEW

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7 A satellite in a circular orbit around Earth has
A gravitational potential energy, only
B internal energy, only
C gravitational potential energy and kinetic energy
D internal energy and kinetic energy

process?

- A 1.9 J
- B 7.5 J
- C 30 J
- D 56 J



9 The work done in **accelerating** an object along a frictionless horizontal surface is **equal to the change** in the object's

- A momentum
- B velocity
- C potential energy
- D kinetic energy

10 As shown in the diagram below, a child applies a constant **20-newton force** along the handle of a wagon which makes a **25° angle** with the horizontal.

How much **work** does the child do in moving the wagon a horizontal distance of **4.0 meters**?

- A 5.0 J
- B 34 J
- C 73 J
- D 80 J





ANSWER KEY

How much **work** is required to move a **single electron** through a **potential difference of 100 volts**?

- A 1.6×10^{-21} J
- B 1.6×10^{-19} J
- C 1.6×10^{-17} J
- D 1.0×10^2 J

(C)

A constant force of **1900 newtons** is required to keep an automobile having a mass of 1.0×10^3 kilograms moving at a constant speed of **20 meters per second**. The **work done in moving the automobile a distance of 2.0×10^3 meters** is

- A 2.0×10^4 J
- B 3.8×10^4 J
- C 2.0×10^6 J
- D 3.8×10^6 J



(d)

What is the **maximum height** to which a **1200-watt motor** could **lift** an object weighing **200 newtons** in **4.0 seconds**?

- A 0.67 m
- B 1.5 m
- C 6.0 m
- D 24 m

(d)

A spring of negligible mass has a spring constant of 50 newtons per meter. If the spring is **stretched 0.40 meter** from its equilibrium position, **how much potential energy** is stored in the spring?

- A 20 J
- B 10 J
- C 8.0 J



(d)



PREVIEW

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- B internal energy, only
- C gravitational potential energy and kinetic energy
- D internal energy and kinetic energy

- A 1.9 J
- B 7.5 J
- C 30 J
- D 56 J



The work done in **accelerating** an object along a frictionless horizontal surface is **equal to the change** in the object's

- A momentum
- B velocity
- C potential energy
- D kinetic energy

(d)

As shown in the diagram below, a child applies a constant **20-newton force** along the handle of a wagon which makes a **25° angle** with the horizontal.

How much **work** does the child do in moving the wagon a horizontal distance of **4.0 meters**?

- A 5.0 J
- B 34 J
- C 73 J
- D 80 J



(c)