Work and Energy

Phys Sci

Name _____ Class _____ Date _____

1 A **5-newton force** causes a spring to stretch **0.2 meter**. What is the **potential energy** stored in the stretched spring?

A 1 J
B 0.5 J
C 0.2 J
D 0.1

2 A student applies a **20-newton force** to move a crate at a constant speed of **4.0 meters per second** across a rough floor. How much **work** is done by the student on the crate in **6.0 seconds**?

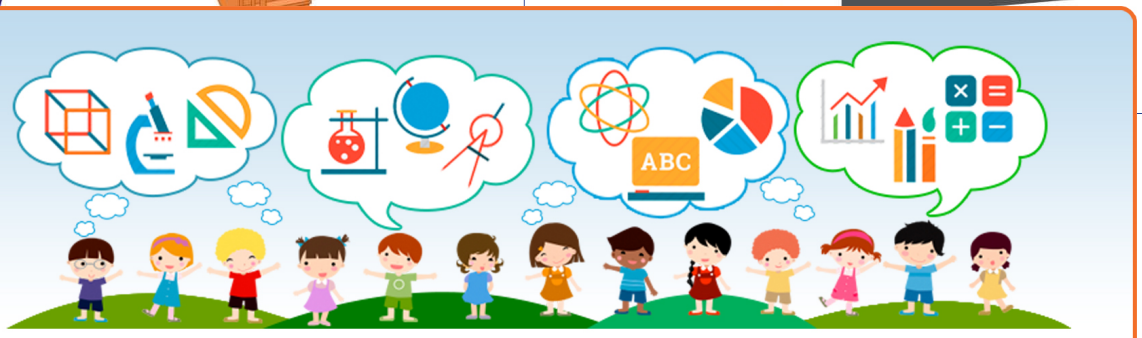
A 8.0 J
B 120 J
C 240 J
D 480 J

3 A **5.0 × 10^2-newton** girl takes **10 seconds** to run up two flights of stairs to a landing, a total of **5.0 meters vertically** above her starting point. What **power** does the girl develop during her run?

A 25 W
B 50 W
C
D

4 The **kinetic energy** of a 980-kilogram race car traveling at 90 meters per second is approximately

A 4.4 × 10^4 J
B 8.8 × 10^4 J
C 4.0 × 10^6 J



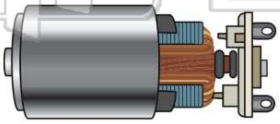
5

7

B 12 J
C 30 J
D 60 J

B $\frac{\text{newton} \cdot \text{meter}}{\text{second}}$ **D** newton • meter

9 A 2000-watt motor working at full capacity can **vertically lift** a 400-newton weight at a **constant speed** of



A 2 × 10^3 m/s
B 50 m/s
C 5 m/s
D 0.2 m/s

10 A 3.0-kilogram mass is attached to a spring having a **spring constant** of 30 newtons per meter. The mass is pulled 0.20 meter from the spring's equilibrium position and released. What is the **maximum kinetic energy** achieved by the mass spring system?

A 2.4 J
B 1.5 J
C 1.2 J
D 0.60 J

ANSWER KEY

A **5-newton force** causes a spring to stretch **0.2 meter**. What is the **potential energy** stored in the stretched spring?

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C 0.2 J
D 0.1

b

A student applies a **20-newton force** to move a crate at a constant speed of **4.0 meters per second** across a rough floor. How much **work** is done by the student on the crate in **6.0 seconds**?

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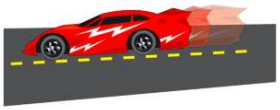
A 25 W
B 50 W
C 250 W
D

c

The **kinetic energy** of a 980-kilogram race car traveling at 90 meters per second is approximately

A 4.4 × 10^4J
B 8.8 × 10^4J
C 4.0 × 10^6 J
D 7.9 × 10^6 J



c

C 30 J
D 60 J

B ——— **D** newton • meter
second

A 2000-watt motor working at full capacity can **vertically lift** a 400-newton weight at a **constant speed** of

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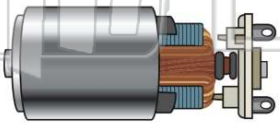

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