Work & Energy

Name _____   Class _____   Date _____

1 The **kinetic energy** of a 980-kilogram race car traveling at 90 meters per second is approximately _____.
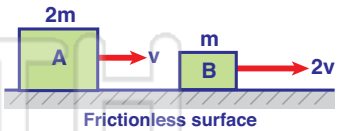Circle the answer letter.

   a. 4.4×10^4 J

   b. 8.8×10^4 J

   c. 4.0×10^6 J

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

0.2 meter

0

0

3 W
e

4 A
2
T

  40 J   150 J   **20.0 N**   **2.00 kg**

  100 J   200 J

5 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. 5 m/s

   c. 50 m/s

6 The diagram below shows block **A**, having mass **2m** and speed **v**, and block **B** having mass **m** and speed **2v**. Compared to the kinetic energy of block **A**, the **kinetic energy** of block **B** is _____.

   a. the same

   b. twice as great

   c. half as great

2m   A → v   **m**   B → 2v
Frictionless surface

7 How much **work** is done on a downhill skier by an average **braking force of** 9.8×10^2 **newtons** to stop her in a distance of 10 meters?

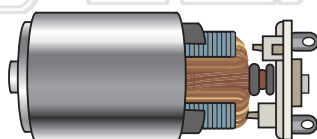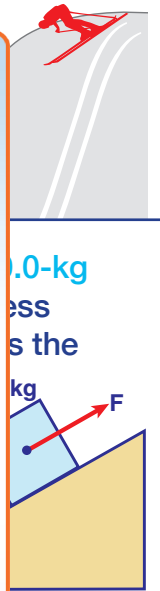**10** How much **work** is done in moving 5.0 coulombs of charge **against** a potential difference of 12 volts?

  2.4 J   12 J   30 J   60 J

(continued) ... force along the handle of a wagon which makes a 25° angle with the horizontal. How much **work** does the boy do in moving the wagon a horizontal distance of 4.0 meters?

_____ J
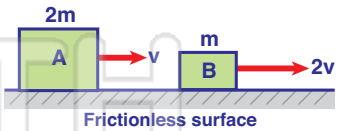
20. N 25° horizontal

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Circle the answer letter.

a. 4.4×10^4 J
b. 8.8×10^4 J
c. 4.0×10^6 J *(circled)*

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

0.2 meter

3 W...
e...

4 A...
2...
T...

40 J   150 J
100 J *(circled)*   200 J

20.0 N   **2.00 kg**

5 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
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a. the same
b. twice as great *(circled)*
c. half as great

2m   **m**
A → v   **B** → 2v
Frictionless surface

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...0.0-kg
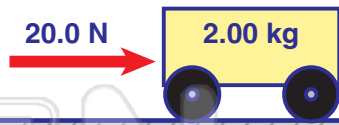...ss
...s the
...kg
F

... wton ... force along the handle of a wagon which makes a 25° angle with the horizontal. How much **work** does the boy do in moving the wagon a horizontal distance of 4.0 meters?

___73___ J

20. N
25°
horizontal

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2.4 J   12 J   30 J   60 J *(circled)*