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**1.** As a 1.0 kg object moves from point A to point B, it is acted upon by a single conservative force which does – 40 J of work during this motion. At point A the speed of the particle is 6.0 m/s and the potential energy associated with the force is + 50 J. What is the potential energy in J at

Select the correct answer.

Name:

point B?

a. + 10	b. + 68
c. + 28	d. + 90
e. + 72	

**2.** A force F applied to mass  $m_1$  produces an acceleration of 4.0 m/s<sup>2</sup>.

When the same force F is applied to mass  $m_2$  it produces an acceleration

of 8.0 m/s<sup>2</sup>. What acceleration, in m/s<sup>2</sup>, would be produced if the two masses were placed together and the same force F was applied?

Select the correct answer.

a. 3.1	b. 0.71
c. 2.7	d. 0.33
e. 0.38	

1

**3.** If *F* = 5.0 N, what is the magnitude of the force in N exerted by block 2 on block 1? (Assume the surface is frictionless.)

2



Select the correct answer.

a. 19	b. 5.0
c. 21	d. 17
e. 23	

**4.** If the mass density of a  $3 \times 10^{6}$  kg mass is  $2 \times 10^{4}$  kg/m<sup>3</sup>, what volume in m<sup>3</sup> does the mass occupy to the nearest order of magnitude?

Select the correct answer.

a. 10 <sup>3</sup>	b. 10 <sup>1</sup>
c. 10 <sup>5</sup>	d. 10 <sup>2</sup>
e. 10 <sup>4</sup>	

**5.** A synchronous satellite revolves around the Earth in a circular orbit.

Select the correct answer.

a. Its acceleration is zero		
because its speed is constant.		

c. Its speed is constant and its velocity is constant.

e. Its speed varies because its acceleration is constant.

6. Given the vectors below, which vector has a zero component in the *y* direction?

b. Its acceleration is zero

d. Its acceleration and its

because its velocity is constant.

velocity are both not constant.

Select the correct answer.



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Date:

Class:

## ANSWER KEY

Name:	Class:	Date:
1 4		

- 1. d

   2. c

   3. d

   4. d

   5. d

   6. d