Chapter 12 Test Review

Question 1

- The SI unit of force is the
- a.joule.
- b.kilogram.
- c.meter.
- d.newton.

d.

Question 2

- When an unbalanced force acts on an object,
- a.the inertia of the object increases.
- b.the object's motion does not change.
- c.the weight of the object decreases.
- d.the object accelerates.

d.

Question 3

- Which of the following relationships is correct?
- a.1 N = 1 kg
- b.1 N = 1 kg·m
- c.1 N = 1 kg·m/s
- d.1 N = 1 kg·m/s^2

d.

Question 4

- The acceleration due to gravity on the surface of Mars is about one third the acceleration due to gravity on Earth's surface. The weight of a space probe on the surface of Mars is about
- a.three times greater than its weight on Earth's surface.
- b.the same as its weight on Earth's surface.
- c.one third its weight on Earth's surface.
- d.nine times greater than its weight on Earth's surface.

c.

Question 5

- When a pair of balanced forces acts on an object, the net force that results is
- a.greater in size than both forces combined.
- b.greater in size than one of the forces.
- c.equal in size to one of the forces.
- d.equal to zero.

d.

Question 6

- The gravitational force between two objects increases as mass
- a.decreases or distance increases.
- b.increases or distance decreases.
- c.decreases or distance decreases.
- d.increases or distance increases.

b.

Question 7

- What kind of friction occurs as a fish swims through water?
- a.fluid
- b.rolling
- c.sliding
- d.static

a.

Question 8

- The forces acting on a falling leaf are
- a.gravity and air resistance.
- b.gravity and static friction.
- c.air resistance and fluid friction.
- d.weight and rolling friction.

a.

Question 9

- As you push a cereal box across a tabletop, the sliding friction acting on the cereal box
- a.acts in the direction of motion.
- b.equals the weight of the box.
- c.is usually greater than static friction.
- d.acts in the direction opposite of motion.

d.

Question 10

- During a head-on auto collision, ___ causes a passenger in the front seat to continue moving forward.
- a.inertia
- b.Newton's 3rd Law
- c.gravity
- d.acceleration

a.

Question 11

- An open parachute increases air resistance of a falling sky diver by
- a.decreasing the weight of the diver.
- b.increasing surface area.
- c.increasing the terminal velocity.
- d.reducing fluid friction.

b.

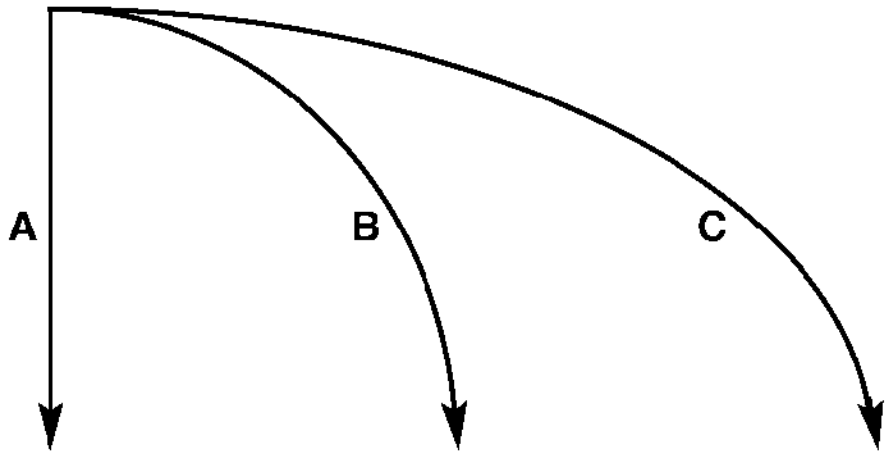
Question 12

- An orange might roll off your cafeteria tray when you stop suddenly because of
- a.the orange's inertia.
- b.the friction forces acting on the orange.
- c.the centripetal force acting on the orange.
- d.the balanced forces acting on the orange.

a.

Question 13

- Figure 12-1 shows the motion of three balls. The curved paths followed by balls B and C are examples of
- a.centripetal motion.
- b.constant motion.
- c.linear motion.
- d.projectile motion.

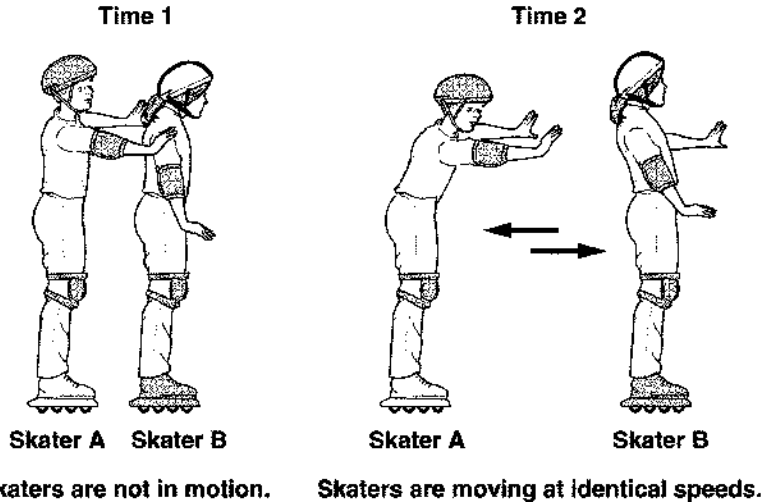


d.

Question 14

- Figure 12-3 is an example of
- a.Newton's 3rd Law of Motion
- b.Newton's 1st Law of Motion
- c.Newton's Law of Gravity
- d.Newton's 2nd Law of Motion

a.



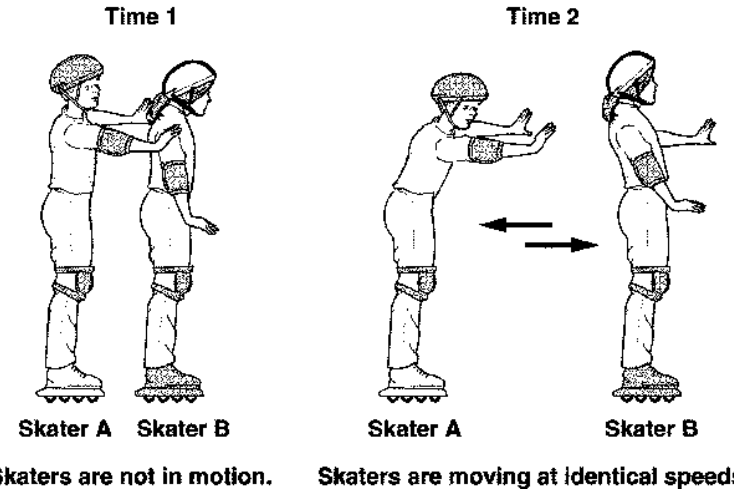
Question 15

- Projectile motion is caused by
- a.the downward force of gravity.
- b.an initial forward velocity.
- c.a final vertical velocity.
- d.the downward force of gravity and an initial forward velocity.

b.

Question 16

- In Figure 12-3, describe the motion of the two skaters at time 2.
- a.There is a balanced force so the skaters' motion does not change
- b.Skater B accelerates forward and Skater a accelerates backwards
- c.Gravity is causing both skaters to accelerate
- d.They are in the same motion as time 1



b.

Question 17

- The property of matter that resists changes in motion is called
- a.friction.
- b.gravity.
- c.inertia.
- d.weight.

c.

Question 18

- Newton’s third law of motion describes
- a.net force.
- b.balanced forces.
- c.centripetal forces.
- d.action and reaction forces.

d.

Question 19

- According to Newton's second law of motion, the acceleration of an object equals the net force acting on the object divided by the object's
- a.mass.
- b.momentum.
- c.velocity
- d.weight.

a.

Question 20

- If a force of 12 N is applied to an object with a mass of 2 kg, the object will accelerate at
- a.0.17 m/s^2.
- b.24 m/s^2.
- c.6 m/s^2.
- d.12 m/s^2.

c.

Question 21

- A tow truck exerts a net horizontal force of 1015 N on an 825-kilogram car. What is the acceleration of the car during this time?
- a. 12 m/s^2
- b. 1.2 m/s^2
- c. 837,375 m/s^2
- d. 0.12 m/s^2

b.

Question 22

- Your weight equals your
- a.mass.
- b.mass divided by the net force acting on you.
- c.mass times the acceleration due to gravity.
- d.mass times your speed.

c.

Question 23

- The mass of a newborn baby is 3.8 kilograms. What is the baby's weight? (The acceleration due to gravity at Earth's surface is 9.8 m/s^2.)
- a. 0.387 N
- b. 372 N
- c. 37.2 N
- d. 3.87 N

C.

Question 24

- In which of the following are action and reaction forces involved?
- a.when a tennis racket strikes a tennis ball
- b.when stepping from a curb
- c.when rowing a boat
- d.all of the above

d.

Question 25

- A small engine causes a 0.4-kg model airplane to accelerate at a rate of 12 m/s^2. What is the net force on the model airplane?
- a. 30 N
- b. 3.0 N
- c. 4.8 N
- d. 48 N

c.