

Multiple Choice

- 1 A baseball has an approximate mass of 0.15 kg. If a bat strikes the baseball with a force of 6 N, what is the acceleration of the ball?
- A 4 m/s²
 - B 6 m/s²
 - C 40 m/s²
 - D 60 m/s²

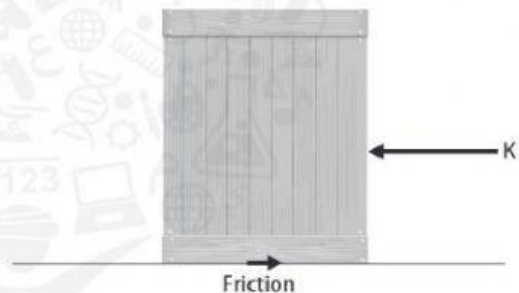
Use the diagram below to answer question 2.



- 2 The person in the diagram above is unable to move the crate from its position. Which is the opposing force?
- A gravity
 - B normal force
 - C sliding friction
 - D static friction
- 3 The mass of a person on Earth is 72 kg. What is the mass of the same person on the Moon where gravity is one-sixth that of Earth?
- A 12 kg
 - B 60 kg
 - C 72 kg
 - D 432 kg

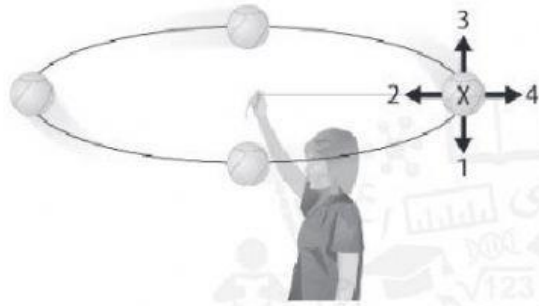
- 4 A swimmer pushing off from the wall of a pool exerts a force of 1 N on the wall. What is the reaction force of the wall on the swimmer?
- A 0 N
 - B 1 N
 - C 2 N
 - D 10 N

Use the diagram below to answer questions 5 and 6.



- 5 Which term applies to the forces in the diagram above?
- A negative
 - B positive
 - C reference
 - D unbalanced
- 6 In the diagram above, what happens when force K is applied to the crate at rest?
- A The crate remains at rest.
 - B The crate moves back and forth.
 - C The crate moves to the left.
 - D The crate moves to the right.
- 7 What is another term for change in velocity?
- A acceleration
 - B inertia
 - C centripetal force
 - D maximum speed

Use the diagram below to answer question 8.



- 8 The person in the diagram is spinning a ball on a string. When the ball is in position X, what is the direction of the centripetal force?
- A 1
B 2
C 3
D 4

- 9 Which is ALWAYS a contact force?
- A electric
B friction
C gravity
D magnetic

- 10 When two billiard balls collide, which is ALWAYS conserved?
- A acceleration
B direction
C force
D momentum

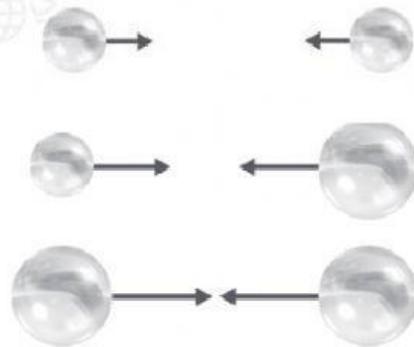
Constructed Response

Use the table below to answer question 11.

Newton's Laws of Motion	Explanation
First	
Second	
Third	

- 11 Explain each of Newton's laws of motion. What is one practical application of each law?

Use the diagram below to answer questions 12 and 13.



- 12 The arrows in the diagram above represent forces. What scientific law does the diagram illustrate? What does the law state?

- 13 Using the diagram, explain how marble mass affects gravitational attraction.