

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/s^2
B 6 m/s^2
C 40 m/s^2
D 60 m/s^2

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

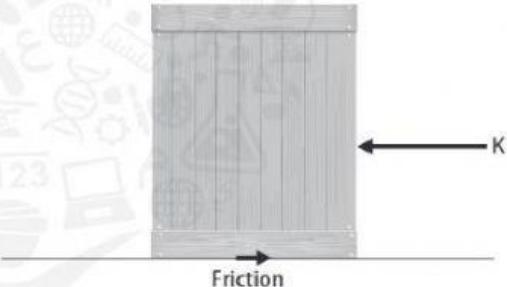
3 The mass of a person on Earth is 72 kg. What is the mass of the same person on the Moon where gravity is one-sixth that of Earth?

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

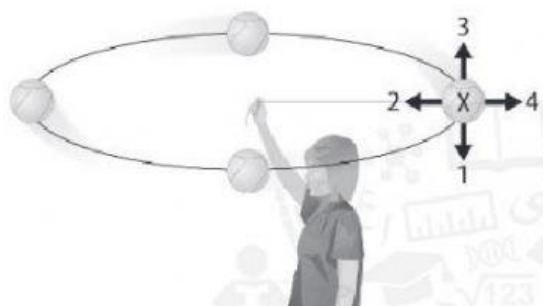
6 In the diagram above, what happens when force K is applied to the crate at rest?

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

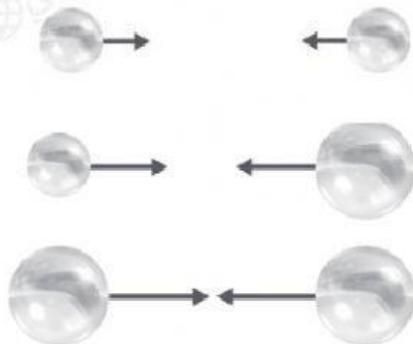
Constructed Response

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.