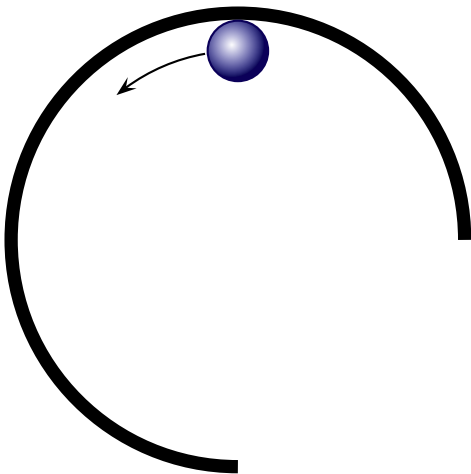


Question 1

A nearly complete hoop is placed on a perfectly frictionless horizontal table. A marble is placed inside the hoop and given an initial push so that it rolls touching the inside of the hoop. Viewed *from above*:

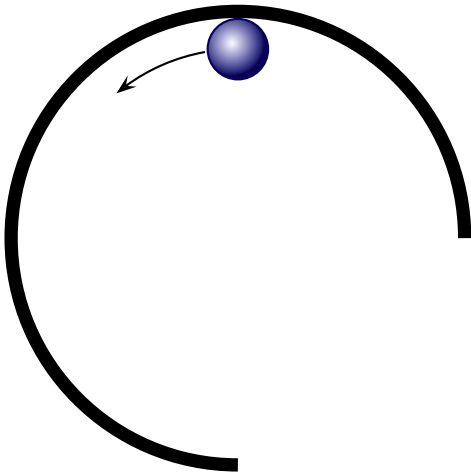


The ball slides at a constant speed while in contact with the hoop. Which of the following is true while the ball slides along the hoop?

1. The net force on the ball is zero.
2. The net force on the ball is not zero.
3. There is not enough information to decide whether the net force on the ball is zero or not.

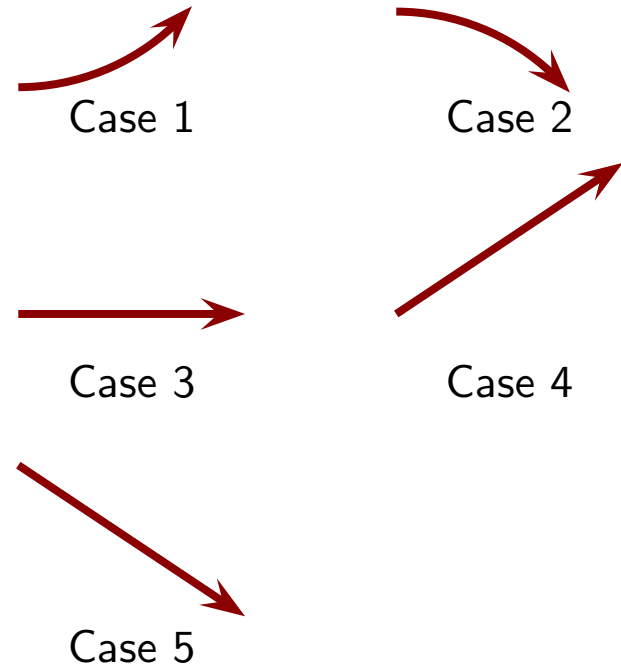
Question 2

A nearly complete hoop is placed on a perfectly frictionless horizontal table. A marble is placed inside the hoop and given an initial push so that it rolls touching the inside of the hoop. Viewed *from above*:



The effects of the earth's gravity and the table cancel each other.

Which of the following best describes the trajectory of the marble after it leaves the hoop?



Question 3

A student (perhaps you) whose weight is 800 N (gravitational force exerted by Earth) stands on the surface of the Earth. Someone else says:

“The student exerts a force of 800 N on the Earth.”

Is this statement:

1. True.
2. False.
3. Impossible to decide.