

# AP Centripetal Force Review

⚠ This is a preview of the draft version of the quiz

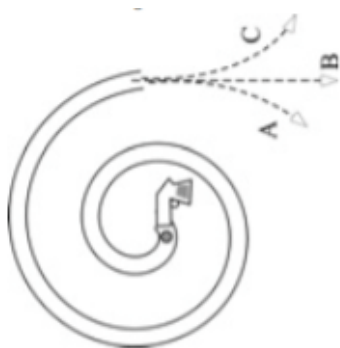
Started: Jan 15 at 3:31pm

## Quiz Instructions

### Question 1

1 pts

A ball is shot into a center of a spiral tube that is lying on a table (neglect gravity). Which path will it follow when it emerges?



B

C

A

### Question 2

1 pts

A rock whirled by a string in a horizontal plane will follow a circular path. If the string breaks, the tendency of the rock is to:

revolve in a smaller circular

increase its speed

continue to follow a circular path

- follow a straight line path

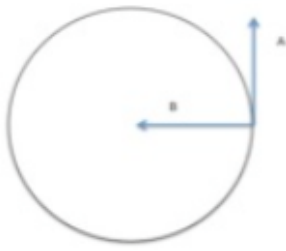
**Question 3****1 pts**

Figure A

Using the figure above, which of the vectors represent the tangential velocity?

- Both vector 'A' and 'B'
- Vector 'B'
- Vector 'A'
- None of the options

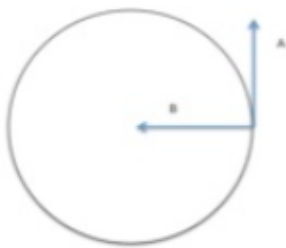
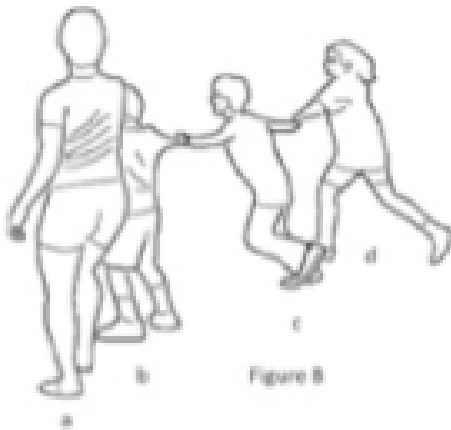
**Question 4****1 pts**

Figure A

Using the figure above, which of the vectors represent the centripetal acceleration?

- Vector 'A'

- Vector 'B'
- Both vector 'A' and 'B'
- None of the options

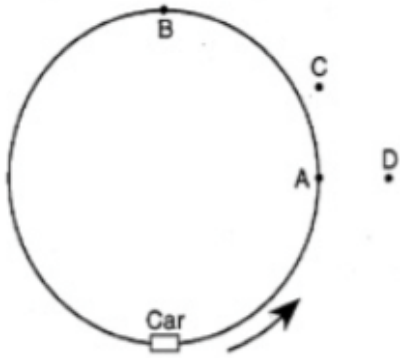
**Question 5****1 pts**

In the figure above, a group of people are holding hand and running in a circle. Which one of the people has the fastest speed?

- Person 'B'
- Person 'C'
- Person 'A'
- Person 'D'

**Question 6****1 pts**

A convertible car with its top down is traveling at a constant speed around a circular track (as shown in the diagram below. When the car is at point 'A' a passenger throws a ball straight up. The ball would most likely land at which point?



- Point 'D'
- Point 'B'
- Point 'C'
- Point 'A'

### Question 7

1 pts

Some students are riding a merry-go-round that is spinning around at a constant speed.



The merry-go-round suddenly stops, and the students fall off. What direction would the students go?

- the students would go in a circular direction
- the students would go toward the center
- the students would go in a straight line

### Question 8

1 pts

Some students are riding a merry-go-round that is spinning around at a constant speed.



What direction is the centripetal acceleration?

- perpendicular to the center of the merry-go-round
- away from the center of the merry-go-round
- toward the center of the merry-go-round

### Question 9

1 pts

When a car travels through a dip in the road, force normal on the car is \_\_\_\_\_ in magnitude compared to the force gravity on the car.

- congruent
- larger
- smaller

### Question 10

1 pts

When a car travels over a hill in the road, force normal on the car is \_\_\_\_\_ in magnitude compared to the force gravity on the car.

- larger

congruent

smaller

**Question 11****1 pts**

When a bucket is connected to a rope and swung at nearly the minimum velocity in order to make a vertical circular path, the magnitude of tension in the rope is pointed in the \_\_\_\_\_ direction when at the top of the circle.

forward

backward

upward

downward

**Question 12****1 pts**

When a bucket is connected to a rope and swung at the minimum velocity in order to make a vertical circular path, the magnitude of tension in the rope is \_\_\_\_\_ when compared to force gravity at the bottom of the circle.

congruent

larger

smaller

**Question 13****1 pts**

When a roller coaster does a loop de loop at nearly the minimum possible speed to make it safely around, the magnitude of force normal is pointed in the \_\_\_\_\_ direction

when at the top of the loop.

- forward
- upward
- backward
- downward

**Question 14****1 pts**

When a roller coaster does a loop de loop at nearly the minimum possible speed to make it safely around, the magnitude of force normal is \_\_\_\_\_ compared to force gravity at the bottom of the loop.

- larger
- smaller
- congruent

**Question 15****1 pts**

Centripetal force is a net force.

- True
- False

**Question 16****1 pts**

Centripetal force cannot be a component of a force.

True False**Question 17****1 pts**

When Tarzan swings on a vine, at the bottom of his swing the tension in the vine is congruent to his force gravity.

 True False**Question 18****1 pts**

A ball is tied to a string and whirled in constant uniform motion in a horizontal circle. If the mass of the ball suddenly doubles, what happens to centripetal force (aka tension)? Assume radius and velocity stay the same.

 it doubles it stays the same it is half as much it quadruples**Question 19****1 pts**

If the mass, velocity, and radius of an object in uniform circular motion tripled, what would happen to the centripetal force required to keep the object in uniform circular motion?



X(1/9)

- x3
- no change
- x9
- x(1/3)

**Question 20****1 pts**

A ball is tied to a string and whirled in constant uniform motion in a horizontal circle. If the mass of the ball suddenly doubles, what happens to centripetal acceleration? Assume the radius and velocity stay the same.

- stays the same
- doubles
- quadruples
- becomes half as much

**Question 21****1 pts**

A ball is tied to a string and whirled in constant uniform motion in a horizontal circle. If the length of the string suddenly increases, what happens to centripetal acceleration?

- increases
- impossible to know
- decreases
- stays the same

**Question 22****1 pts**

Tripling the velocity of an object in uniform circular motion leads to a \_\_\_\_\_ increase in centripetal acceleration.

- x2
- x9
- x3
- x27

**Question 23****1 pts**

Frequency is the number of revolutions per unit time and can be measure in Hertz.

- True
- False

**Question 24****1 pts**

The reciprocal of the period is the frequency.

- True
- False

Not saved

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