

Centripetal Force Quiz PDF

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Discuss the significance of centripetal force in maintaining satellite orbits and the role of gravity in this context.

What is the direction of centripetal force in circular motion?

- Outward from the center
- Tangential to the path
- Inward towards the center
- Perpendicular to the motion

What provides the centripetal force for a car turning on a curved road?

- Gravity
- Air resistance
- Friction
- Engine power

Compare and contrast centripetal and centrifugal forces in terms of their origin and effects in circular motion.

Which of the following is NOT a source of centripetal force?

- Tension in a string
- Friction between surfaces
- Air resistance
- Gravitational pull

Which of the following is the formula for centripetal force?

- $F = ma$
- $F = \frac{mv^2}{r}$
- $F = mg$
- $F = \frac{1}{2}mv^2$

How does the concept of centripetal force apply to the design of amusement park rides like roller coasters?

Which of the following forces acts as a centripetal force in planetary orbits?

- Tension
- Friction
- Magnetic force
- Gravity

What is the role of friction in providing centripetal force for a vehicle navigating a curve?

What is the term for the perceived force that acts outward in a rotating frame?

- Centripetal force
- Gravitational force
- Centrifugal force
- Electromagnetic force

In the context of circular motion, which forces can be considered real forces? (Select all that apply)

- Centripetal force
- Centrifugal force
- Gravitational force
- Frictional force

Which of the following statements about centripetal acceleration are true? (Select all that apply)

- It is directed towards the center of the circle
- It depends on the square of the velocity
- It is independent of the radius
- It is zero in uniform circular motion

Explain why centripetal force is not considered a separate force but rather a result of other forces.

In which unit is centripetal force measured?

- Joules
- Pascals
- Newtons
- Watts

Centripetal force is necessary for which of the following scenarios? (Select all that apply)

- A satellite orbitin Earth
- A car driving straight on a highway
- A roller coaster looping a loop
- A pendulum at rest

Which of the following can act as a centripetal force? (Select all that apply)

- Tension
- Friction
- Gravity
- Magnetic force

What is the relationship between centripetal force and velocity in circular motion?

- Directly proportional to the square of velocity
- Inversely proportional to velocity
- Independent of velocity
- Directly proportional to velocity

Describe a real-world scenario where tension acts as the centripetal force and explain the dynamics involved.

In a rotating frame, which of the following forces are experienced? (Select all that apply)

- Centripetal force
- Centrifugal force

- Gravitational force
- Electromagnetic force

Which factors affect the magnitude of centripetal force? (Select all that apply)

- Mass of the object
- Radius of the circular path
- Speed of the object
- Temperature of the environment