



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 An amusement park ride moves a rider at a constant speed of **14 meters per second** in a horizontal circular path of **radius 10 meters**. What is the rider's **centripetal acceleration** in terms of **g**, the acceleration due to gravity?

- A 1g
- B 2g
- C 3g
- D 0g

2 The chart below gives the mass and orbital period of each of four satellites, 1, 2, 3, and 4, orbiting Earth in circular paths.

Which satellite is closest to Earth?

- A 1
- B 2
- C 3
- D 4

Satellite	Mass (kilograms)	Orbital Period (hours)
1	500	4
2	500	2
3	100	6
4	100	3

3 The **Moon's orbit** is **not** classified as **geosynchronous** because

- A the Moon's position over Earth's surface

4 An object falls freely from rest near the surface of Earth. What is the **speed** of the object after having fallen a distance of **100 meters**?



## PREVIEW

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7 **Light frequencies** are **lower** than the **actual emitted frequencies**. The astronomer concludes that the **distance** between the star and Earth is

- A decreasing
- B increasing
- C unchanging



8 **5.0 meters per second**.

The **centripetal acceleration** of the car at the position shown is directed toward **point**

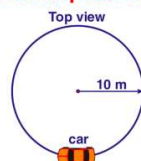
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9 A **60-kilogram** car travels clockwise in a horizontal circle of **radius 10 meters** at **5.0 meters per second**.

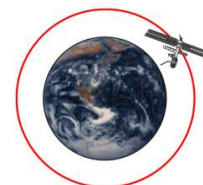
The **magnitude** of the **centripetal force** acting on the car is

- A 590 N
- B 150 N
- C 30 N
- D 2.5 N



10 What is the **period of orbit** of a communications satellite in **geosynchronous orbit** about Earth?

- A 1 year
- B 24 hours
- C 12 hours
- D 60 minutes





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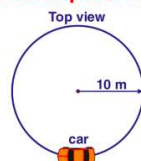
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