



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

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

- A the Moon's position over Earth's surface varies with time
- B the Moon's mass is very large compared to the mass of all other Earth satellites
- C the Moon is a natural satellite, rather than

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

4 An object falls freely from rest near the surface of Earth. What is the **speed** of the object after having fallen a distance at **4.90 meters**?

- A 4.90 m/s
- B 9.80 m/s



5



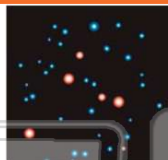
PREVIEW

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7

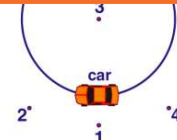
star and Earth is

- A decreasing
- B increasing
- C unchanging



of the car at the position shown is directed toward **point**

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

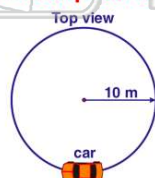


9

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





ANSWER KEY

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(b)

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(b)

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- C the Moon is a natural satellite, rather than an artificial one
- D the Moon always has the same half of its

(a)

An object falls freely from rest near the surface of Earth. What is the **speed** of the object after having fallen a distance of **4.90 meters**?

- A 4.90 m/s
- B 9.80 m/s
- C 24.0 m/s

(b)



PREVIEW

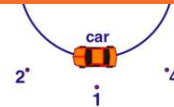
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- A decreasing
- B increasing
- C unchanging



toward point

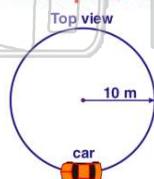
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(b)

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- D 60 minutes



(b)