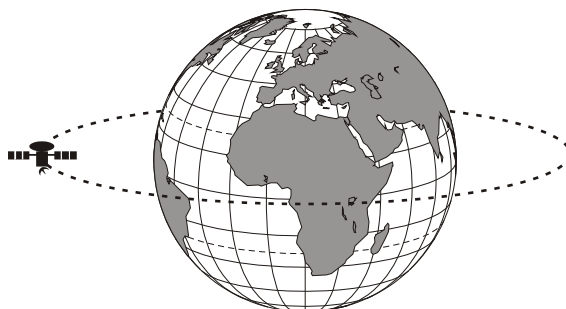


# Circular Motion PPQs

Name .....

1. A television satellite is in a circular orbit around the Earth.



(a) Explain, as fully as you can, why the satellite stays in its orbit.

.....

.....

.....

.....

.....

.....

(4)

(b) A second satellite, which has exactly the same mass as the first, is put into a higher orbit. The second satellite moves at half the speed of the first.

Compare the kinetic energy of the satellites as they move around their orbits.

Explain your answer.

.....

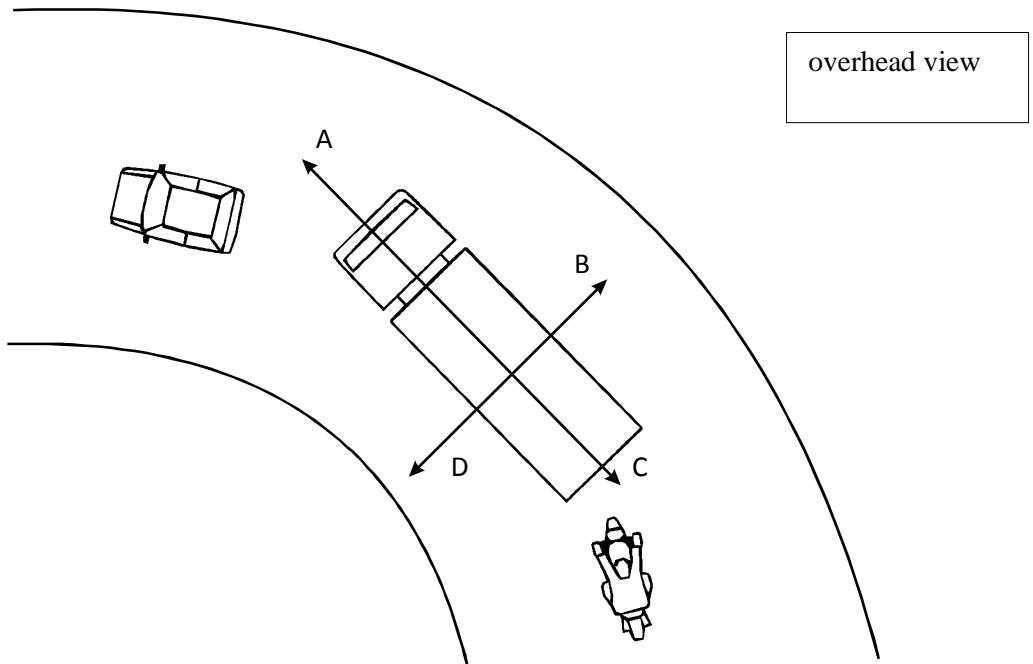
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(3)  
(Total 7 marks)

2. The lorry, the car and the motor cycle are rounding a circular bend at the **same** speed.



(a) Which force, **A**, **B**, **C** or **D**, acting on the lorry is known as the centripetal force?

Force .....

(1)

(b) Complete the sentence below by crossing out the two lines in each box which are wrong.

The biggest centripetal force will be on the

- |            |
|------------|
| car        |
| lorry      |
| motorcycle |

because that is

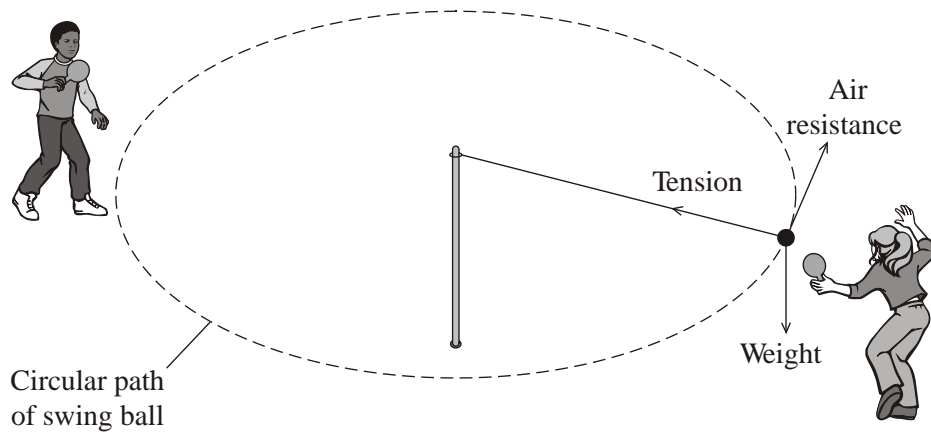
the vehicle which has the greatest

- |        |
|--------|
| mass   |
| volume |
| weight |

(2)

(Total 3 marks)

3. The diagram shows two children playing with a toy called a swing ball. The ball is joined to a pole by a strong string. The children hit the ball so that it goes round in a circular path.



- (a) Which force causes the ball to move in a circle?

Draw a ring around your answer.

**air resistance**

**tension**

**weight**

(1)

- (b) Complete the sentences by ticking (✓) the correct ending.

- (i) The force needed to make the ball move in a circular path is larger if

the speed of the ball is increased.

the speed of the ball is decreased.

the string is made longer.

(1)

(ii) The continuous acceleration of a ball moving in a circular path changes

the speed of the ball.

the direction of the ball.

the weight of the ball.

(1)

(c) Which of the following words is used to describe any force that causes an object to move in a circular path?

Draw a ring around your answer.

**centripetal**

**frictional**

**gravitational**

**universal**

(1)

(Total 4 marks)