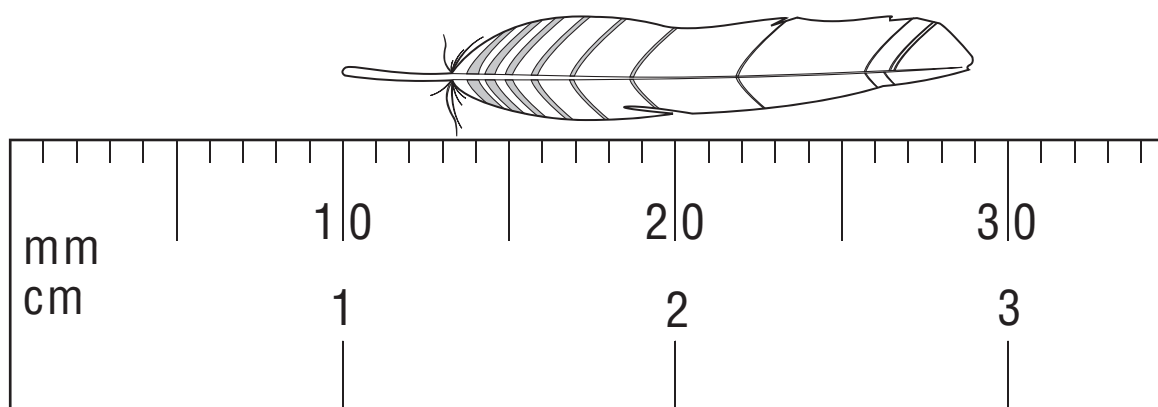


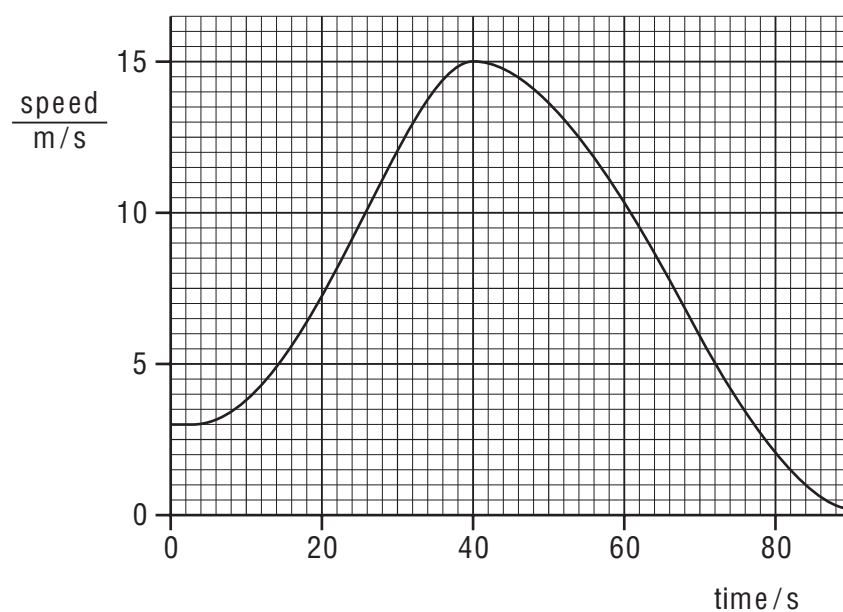
## 2

- 1 The diagram shows an enlarged drawing of the end of a metre rule. It is being used to measure the length of a small feather.



What is the length of the feather?

- A** 19 mm      **B** 29 mm      **C** 19 cm      **D** 29 cm
- 2 The speed-time graph shown is for a car moving in a straight line.



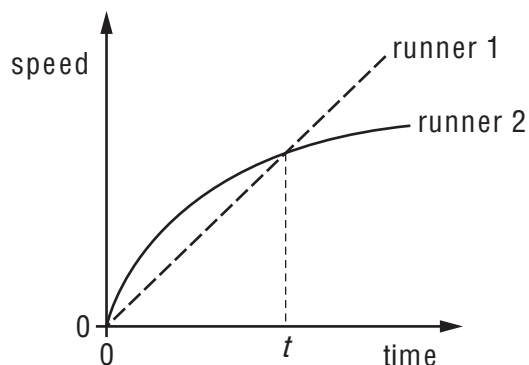
What is the acceleration of the car when the time is 40 s?

- A**  $0 \text{ m/s}^2$       **B**  $\frac{15-3}{40} \text{ m/s}^2$       **C**  $\frac{15}{40} \text{ m/s}^2$       **D**  $(15-3) \text{ m/s}^2$

3

- 3 Two runners take part in a race.

The graph shows how the speed of each runner changes with time.

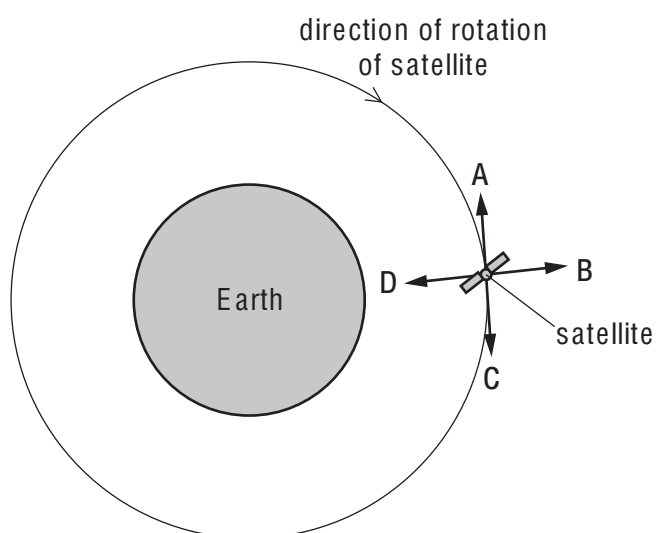


What does the graph show about the runners at time  $t$ ?

- A Both runners are moving at the same speed.
  - B Runner 1 has zero acceleration.
  - C Runner 1 is overtaking runner 2.
  - D Runner 2 is slowing down.
- 4 A satellite orbits the Earth above the atmosphere at a constant speed.

The diagram shows the satellite at one point in its circular orbit around the Earth.

Which labelled arrow shows the direction of the resultant force on the satellite at the position shown?



- 5 A cup contains hot liquid.

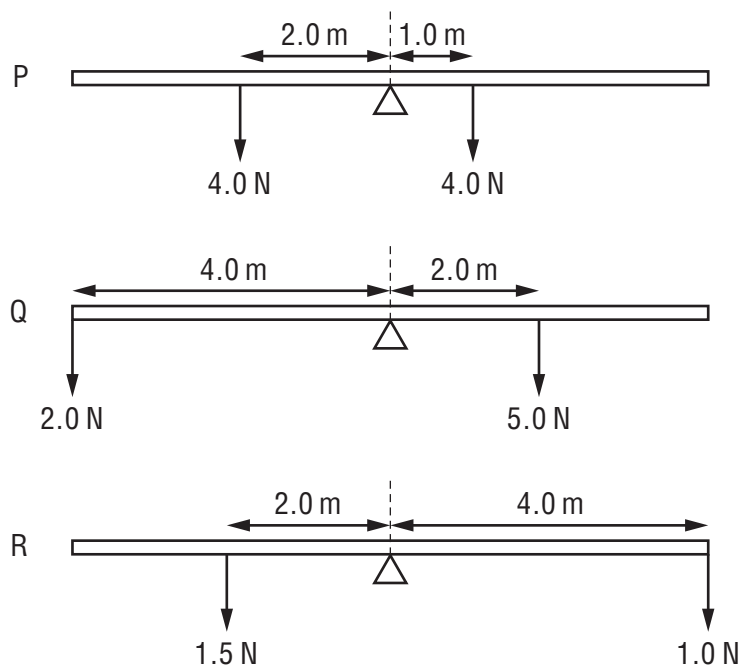
Some of the liquid evaporates.

What happens to the mass and what happens to the weight of the liquid in the cup?

|          | mass           | weight         |
|----------|----------------|----------------|
| <b>A</b> | decreases      | decreases      |
| <b>B</b> | decreases      | stays the same |
| <b>C</b> | stays the same | decreases      |
| <b>D</b> | stays the same | stays the same |

- 6 The diagrams show three uniform beams P, Q and R, each pivoted at its centre.

The two forces acting on each beam are also shown.



Which beams rotate clockwise?

- A** P and Q only
- B** P and R only
- C** Q and R only
- D** P, Q and R