

**GCSE Physics A (Gateway)**

**J249/02 Physics A P5-P8 and P9 (Foundation Tier)**

**Question Set 7**

1 (a) A car starts from rest and accelerates at  $3 \text{ m/s}^2$ .

Use the equation: Acceleration = Change in velocity  $\div$  Time taken

Calculate the **velocity** of the car after 4 s.

$$v=0 \quad a = \frac{v-u}{t} \quad at = v-0$$
$$3 \times 4 = 12 \quad at = v$$

Answer = .....12..... m/s

[2]

(b) A roller coaster car moves down a slope with an acceleration of  $5 \text{ m/s}^2$ .

The force on the roller coaster car is 4000 N.

Calculate the **mass** of the roller coaster car.

$$F = ma$$
$$4000 = 5m$$
$$m = 800$$

Answer = .....800..... kg

[3]

**Total Marks for Question Set 7: 5**

---

# OCR

Oxford Cambridge and RSA

## **Copyright Information**

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website ([www.ocr.org.uk](http://www.ocr.org.uk)) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge