

**GCSE Physics B (Twenty First Century Science)**  
**J259/02** Depth in physics (Foundation Tier)

**Question Set 22**

1 Beth is a skydiver. Skydivers freefall before opening a parachute.

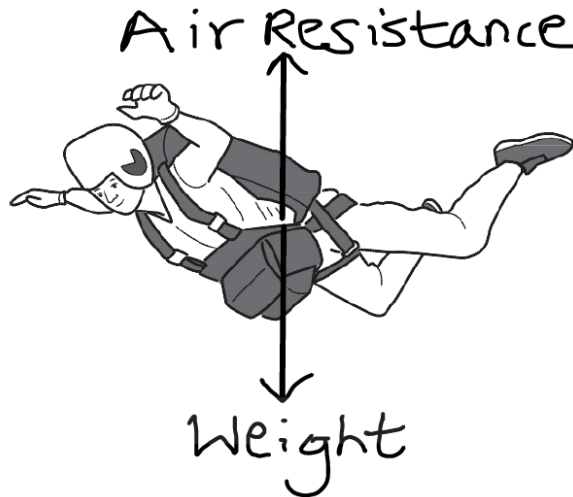
(a) (i) After falling for a small period of time, balanced forces act on Beth.

Describe Beth's movement when these balanced forces act.

[1]

Constant velocity

(ii) Draw **two** labelled arrows on the diagram to identify these balanced forces acting on Beth.



(b) Beth has a mass of 60 kg.

Calculate Beth's weight.

Use the equation: weight = mass  $\times$  gravitational field strength

Gravitational field strength = 10 N/kg

$$W = mg = 60 \times 10 = 600 \text{ N}$$

Weight = ..... 600 ..... N [2]

(c) Mass is a scalar quantity. Weight is a vector quantity.

(i) Give **one** other example of a vector quantity. Velocity [1]

(ii) What is the difference between a vector quantity and a scalar quantity? [1]

Vectors have direction and scalars don't

**Total Marks for Question Set 22: 7**

---

# 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