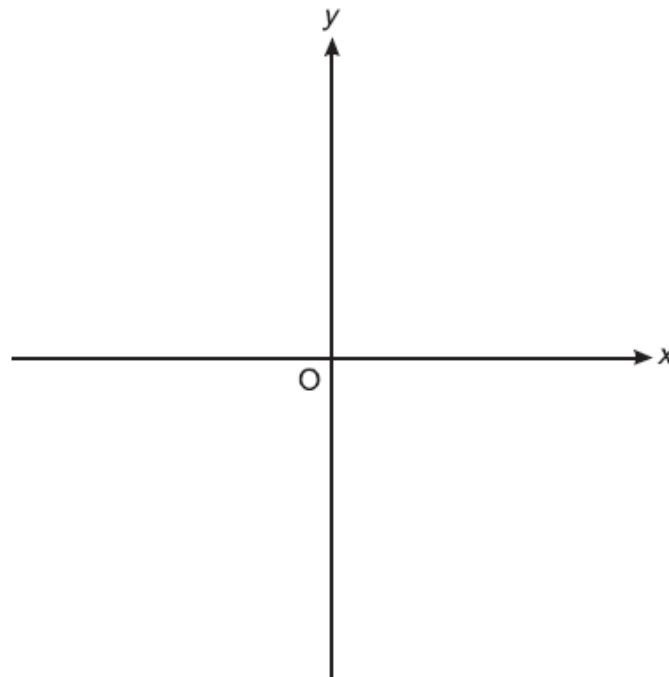


# Quadratic & Cubic Graphs (H)

A collection of 9-1 Maths GCSE Sample and Specimen questions from AQA, OCR, Pearson-Edexcel and WJEC Eduqas.

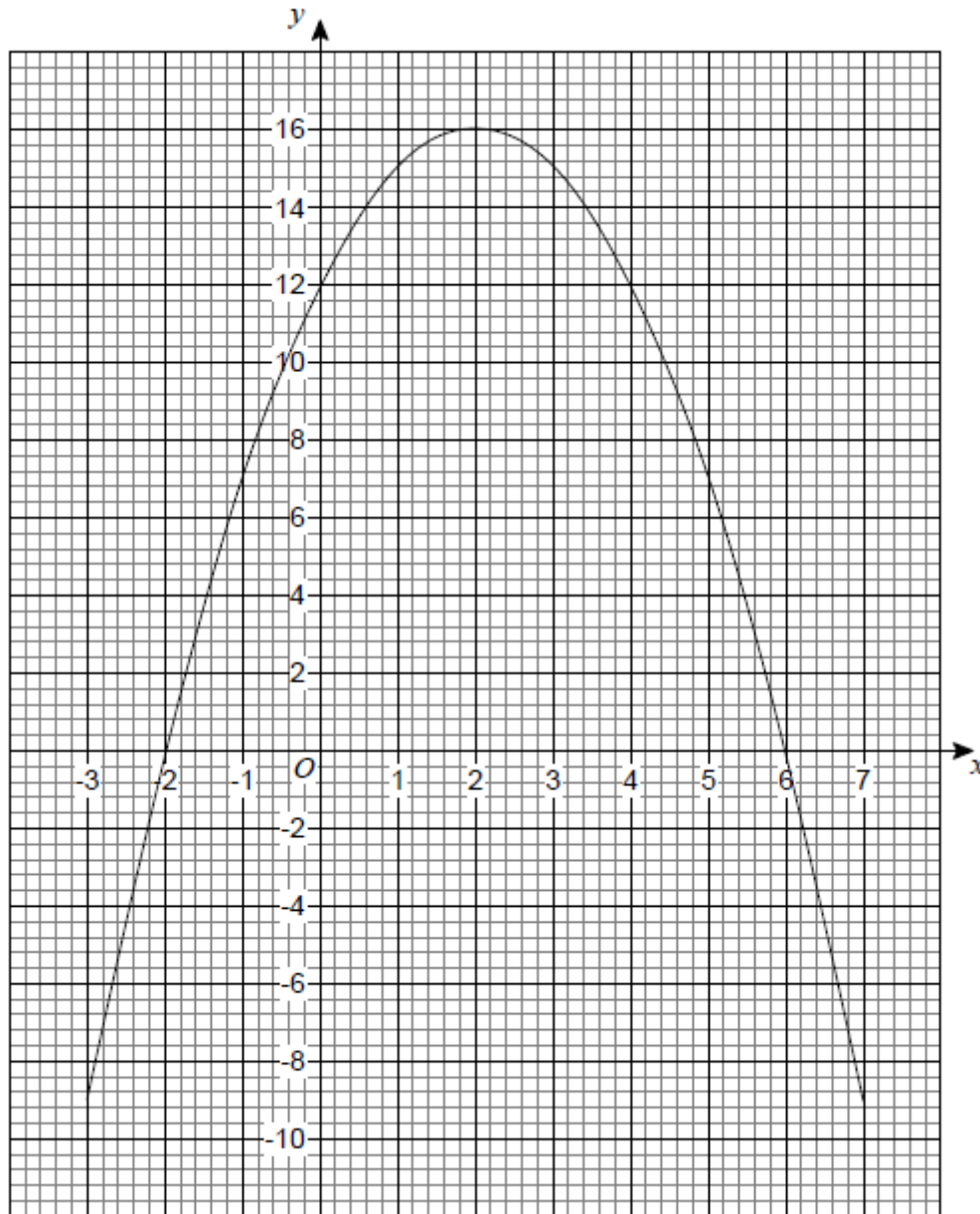
Name:	
Total Marks:	

1. Sketch a graph on the axes below that shows  $y = x^3$ .



[2]

2. The graph  $y = a + bx - x^2$  is shown.



(a) Circle the coordinates of the turning point of the curve.

- (-2, 0)      (0, 12)      (2, 16)      (6, 0)

[1]

(b) Circle the value of a.

- 2                  12                  16                  6

[1]

(c) Circle the two roots of  $a + bx - x^2 = 0$

- 2 and 6                  2 and -6                  2 and 6                  -2 and -6

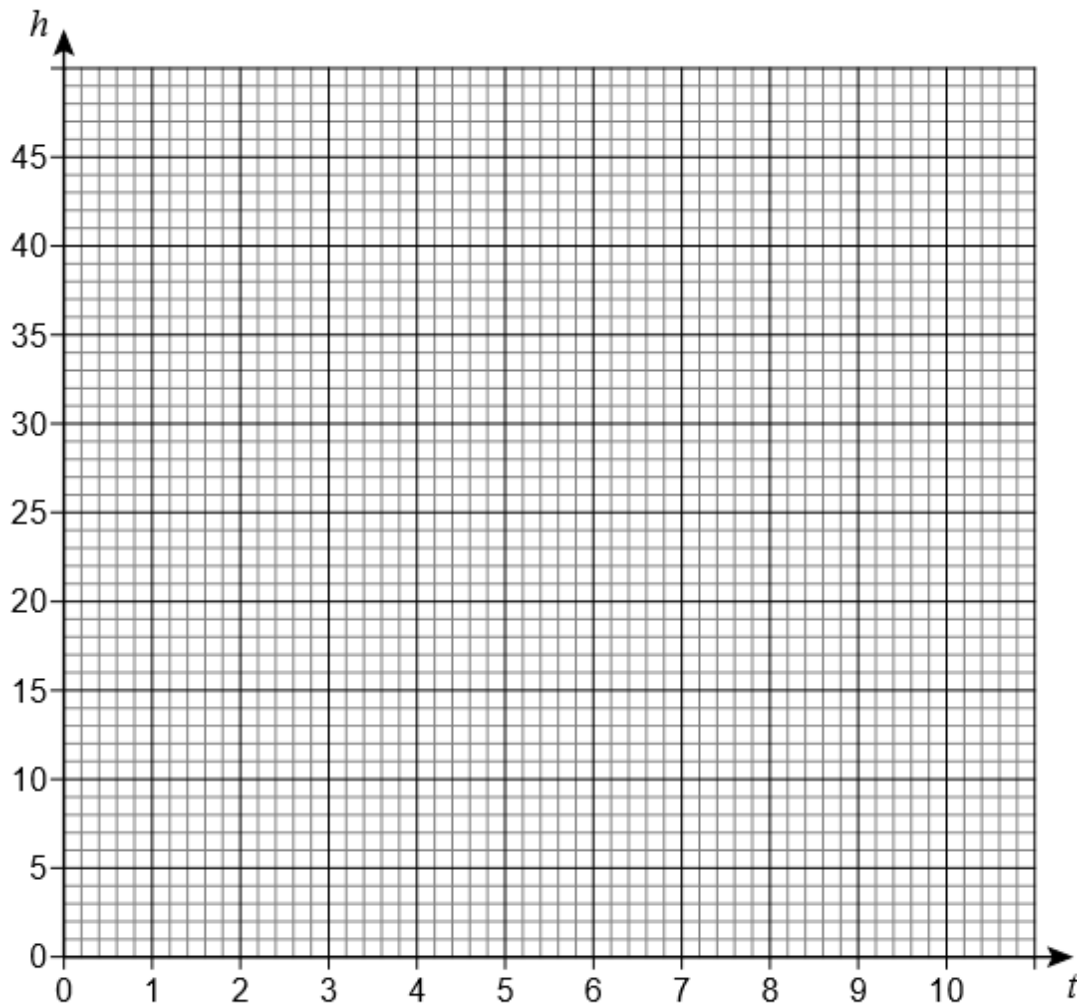
[1]

3. The height,  $h$  metres, of a particle at time,  $t$  seconds, is given by the function

$$h = 0 \quad 0 \leq t < 2$$

$$h = (14 - t)(t - 2) \quad 2 \leq t \leq 10$$

a) Draw a graph to show the height of the particle in the first 10 seconds.

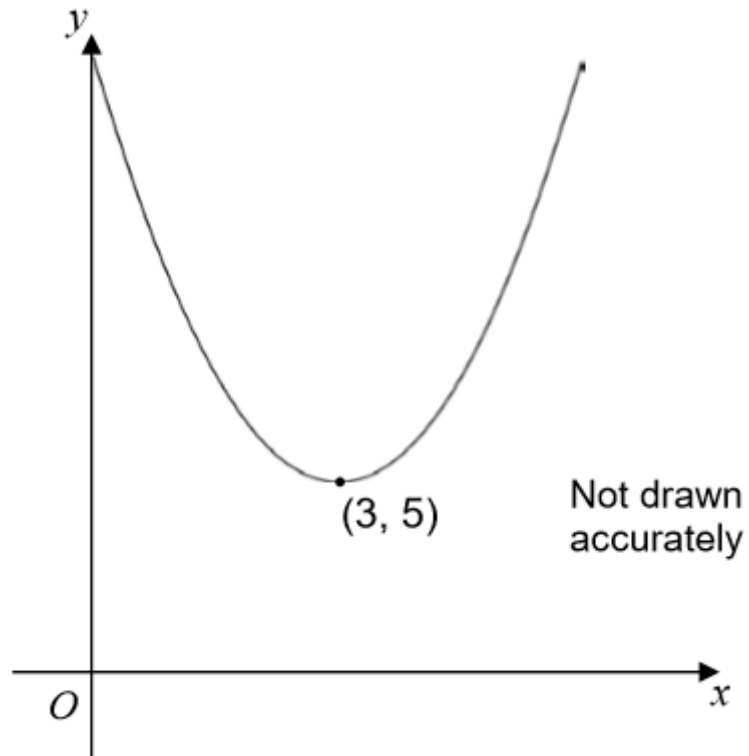


[3]

b) By joining the points on the graph where  $t = 3$  and  $t = 7$  with a straight line, work out the average rate of change of height between 3 and 7 seconds.

[2]

4. A sketch of  $y = x^2 + cx + d$  is shown.



The turning point is  $(3, 5)$

Work out the values of  $c$  and  $d$ .

[3]

## CREDITS AND NOTES

Question	Awarding Body
1	OCR
2	AQA
3	AQA
4	AQA

### Notes:

These questions have been retyped from the original sample/specimen assessment materials and whilst every effort has been made to ensure there are no errors, any that do appear are mine and not the exam board s (similarly any errors I have corrected from the originals are also my corrections and not theirs!).

Please also note that the layout in terms of fonts, answer lines and space given to each question does not reflect the actual papers to save space.

These questions have been collated by me as the basis for a GCSE working party set up by the GLOW maths hub - if you want to get involved please get in touch. The objective is to provide support to fellow teachers and to give you a flavour of how different topics "could" be examined. They should not be used to form a decision as to which board to use. There is no guarantee that a topic will or won't appear in the "live" papers from a specific exam board or that examination of a topic will be as shown in these questions.



### Links:

AQA <http://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300>

OCR <http://ocr.org.uk/gcsemaths>

Pearson Edexcel <http://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics-2015.html>

WJEC Eduqas <http://www.eduqas.co.uk/qualifications/mathematics/gcse/>

### Contents:

This version contains questions from:

AQA – Sample Assessment Material, Practice set 1 and Practice set 2

OCR – Sample Assessment Material and Practice set 1

Pearson Edexcel – Sample Assessment Material, Specimen set 1 and Specimen set 2

WJEC Eduqas – Sample Assessment Material