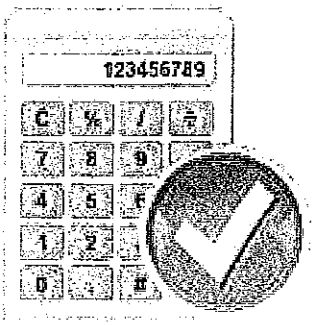
Year 11 – Set 3 Revision Homework Easter Holidays

Name: _____

Teacher: _____



Instructions

- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers.

It is important that you put maximum effort into all homework tasks!

If you are having problems with any of the questions use the Corbett Maths website to support you. We have put the relevant video number next to each question to help you.

The following sites may also be useful:

- PiXL Maths App
- MrBartonMaths – use the student section
- Mathsgenie
- MyMaths (croftonhs, pentagon)
- GCSE Bitesize

Your Class teacher will go through the questions in the first week after Easter.

Answer **all** questions in the spaces provided

1 Circle the fraction that is equivalent to 3.875 Video 124/128 **[1 mark]**

$\frac{15}{4}$ $\frac{29}{8}$ $\frac{31}{8}$ $\frac{15}{8}$

2 What is 50 as a percentage of 20? Video 237
Circle your answer. **[1 mark]**

10% 40% 150% 250%

3 Circle the point that does **not** lie on the curve $y = x^3$ Video 20 **[1 mark]**

$\left(-\frac{1}{2}, -\frac{1}{8}\right)$ (5, 125) $\left(\frac{1}{3}, \frac{1}{9}\right)$ (–1, –1)

4 Which **one** of these is a unit of density? Video 384

Circle your answer.

[1 mark]

kg/m^2 m^2/kg kg/m^3 m^3/kg

5 Solve $4(3x - 2) = 2x - 5$ Video 110

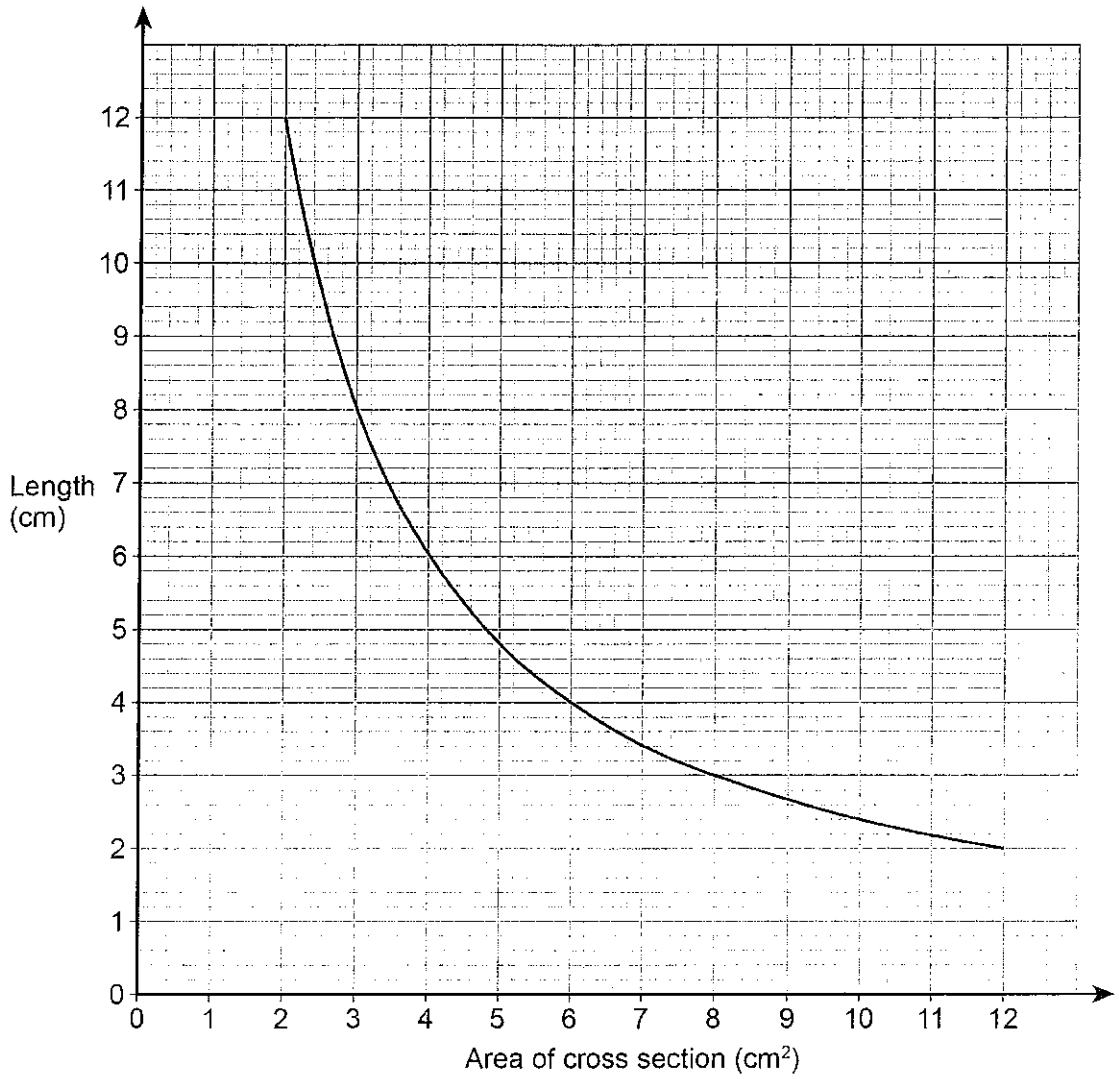
[3 marks]

$x =$ .....

Turn over for the next question

7

6 The graph shows information about prisms with the same volume.



6 (a) Give **one** example to show the volume is 24 cm^3

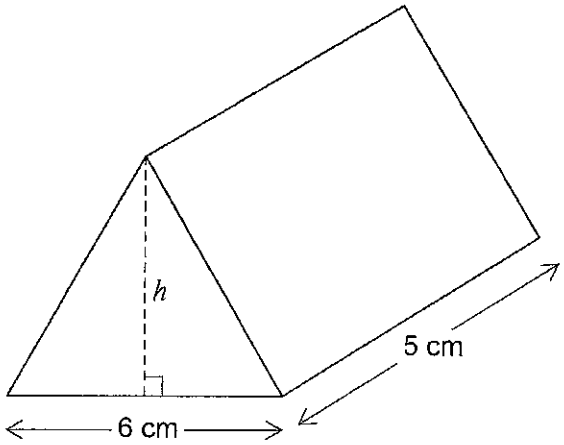
Video 256

[1 mark]

6 (b) The diagram shows a prism with volume 24 cm^3

The height of the triangular cross section is h.

Video 356



Work out the height, h.

[3 marks]

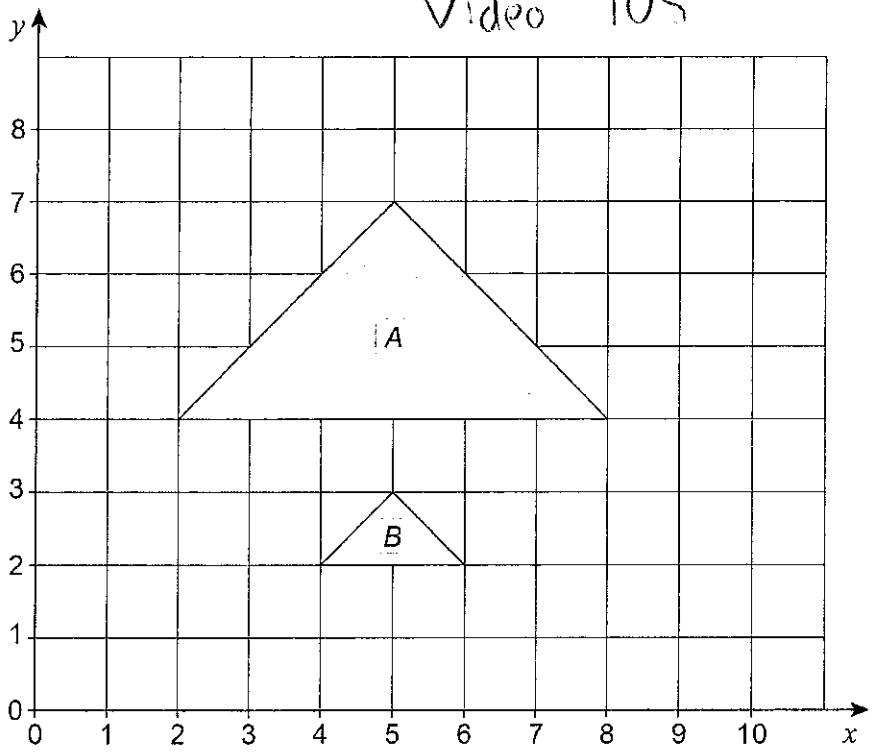
Answer _____ cm

Turn over for the next question

4

7 Describe fully the **single** transformation that maps triangle *A* to triangle *B*.

Video 105



[3 marks]

8 The table shows information about the distances walked by 120 students on their way to school one week.

Video 55

Distance, x (miles)	Frequency		
$0 < x \leqslant 5$	20		
$5 < x \leqslant 10$	48		
$10 < x \leqslant 15$	30		
$15 < x \leqslant 20$	22		
	Total = 120		

Work out an estimate for the mean distance.

[3 marks]

Answer _____ miles

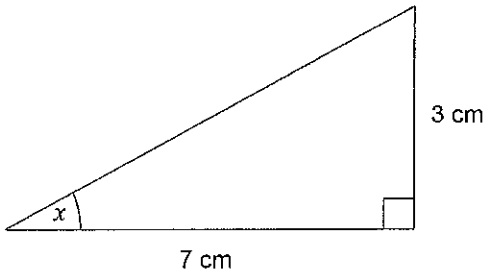
Turn over for the next question

6

9 Work out the size of angle x.

Video 331

Not drawn accurately



[2 marks]

Answer ..... degrees

Do not write outside the box

10 Work out the next term of this quadratic sequence. Video 287 **[2 marks]**

5 8 14 23 .....

Answer _____

11 Circle the expression that is equivalent to $\frac{3x^2}{6x^2+3}$ Video 146

[1 mark]

$\frac{x^2}{2x^2+3}$ $\frac{x^2}{6x^2+1}$ $\frac{x^2}{2x^2+1}$ $\frac{1}{2}+x^2$

Turn over for the next question

5

12 The table shows information about the UK and Germany.

	Population	Area (square miles)
UK	64 000 000	95 000
Germany	82 000 000	140 000

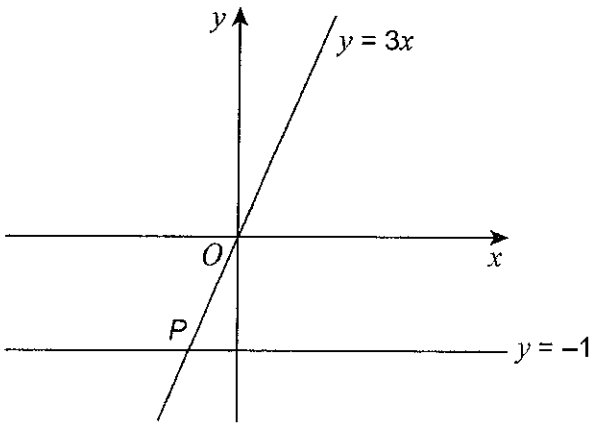
Population density = $\frac{\text{population}}{\text{area}}$

Compare the population densities of the UK and Germany.

[3 marks]

13 Two straight lines intersect at point P.

Video 20



Not drawn accurately

Circle the coordinates of P.

[1 mark]

(–3, –1) $\left(-1, -\frac{1}{3}\right)$ (–1, –3) $\left(-\frac{1}{3}, -1\right)$

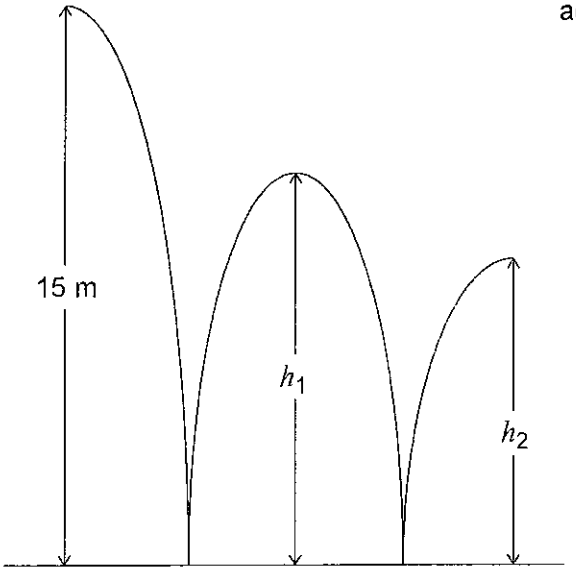
Turn over for the next question

4

14 A ball is thrown from a height of 15 metres.

It bounces to height h_1, then to height h_2 as shown.

Not drawn accurately



h_1 is three quarters of the original height.

14 (a) Jack expects h_2 to be three quarters of h_1

Work out the value of h_2 that he expects.

[2 marks]

Answer _____ metres

14 (b) In fact, h_2 is two thirds of h_1

Video 137

How does this affect the answer to part (a)?

Tick a box.

☐ The ball bounced higher than he expected

☐ The ball bounced lower than he expected

Show working to support your answer.

[2 marks]

Turn over for the next question

4

15 Mirek invests £6000 at a compound interest rate of 1.5% per year.
He wants to earn more than £1000 interest.

Video 236

Work out the **least** time, in whole years, that this will take.

[3 marks]

Answer _____ years

16 (a) Factorise fully $9y^3 - 6y$

Video 117

[2 marks]

Answer _____

16 (b) Factorise $3x^2 - 22x + 7$

Video 119

[2 marks]

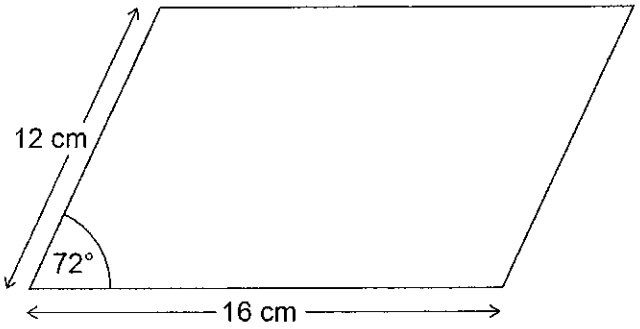
Answer _____

Turn over for the next question

7

17 Work out the area of the parallelogram.

Video 330 / 44



Not drawn accurately

[3 marks]

Answer _____ cm^2