

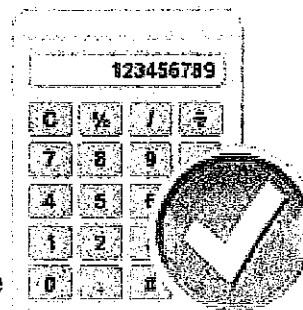
Year 11 – Set 1
Revision Homework
Easter Holidays

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?
Circle your answer.

Video 237 [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?
Circle your answer.

Video 384

[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]

 $x =$

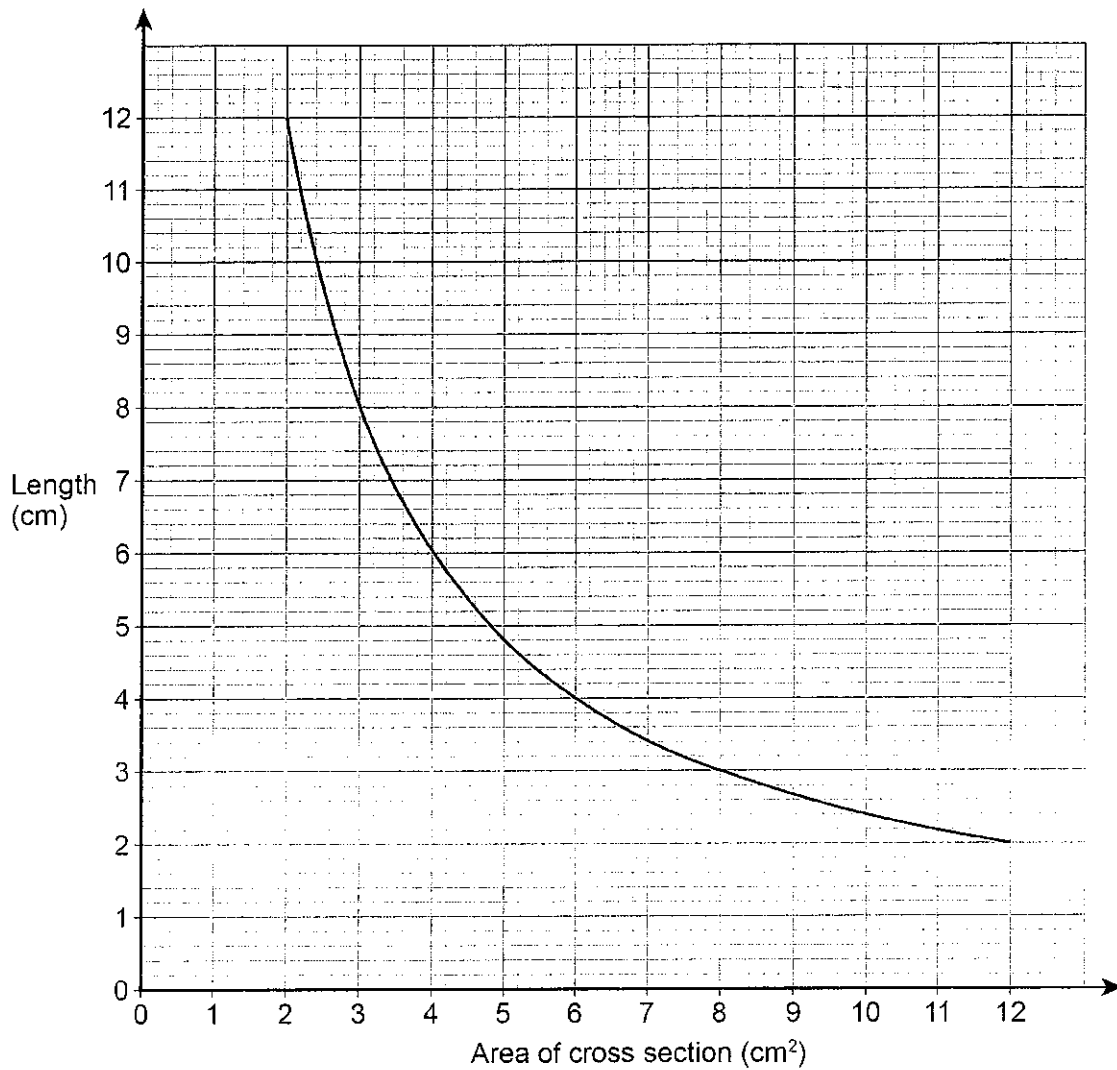
Turn over for the next question

7

Turn over ►



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



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

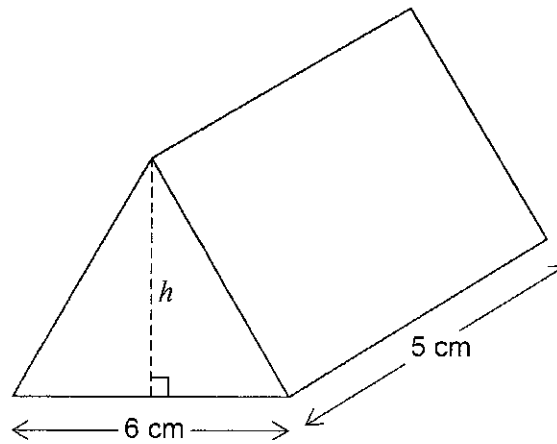
Video 356

[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

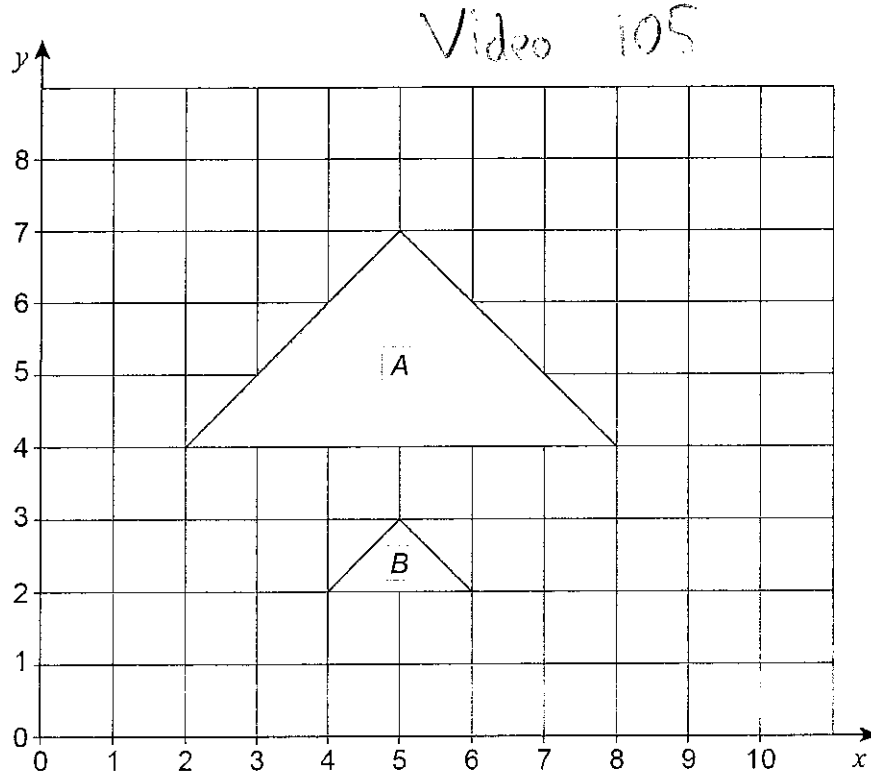
Turn over for the next question

4

Turn over ►



7

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

[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		
$0 < x \leq 5$	20		
$5 < x \leq 10$	48		
$10 < x \leq 15$	30		
$15 < x \leq 20$	22		
	Total = 120		

Work out an estimate for the mean distance.

[3 marks]

Answer _____ miles

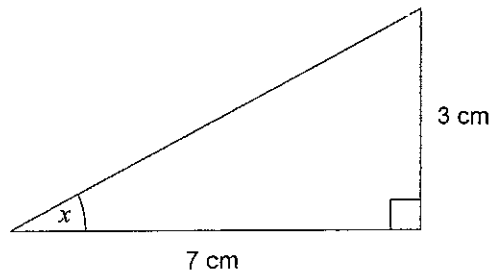
Turn over for the next question



9

Work out the size of angle x .

Video 331

Not drawn
accurately

[2 marks]

Answer degrees



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



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

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

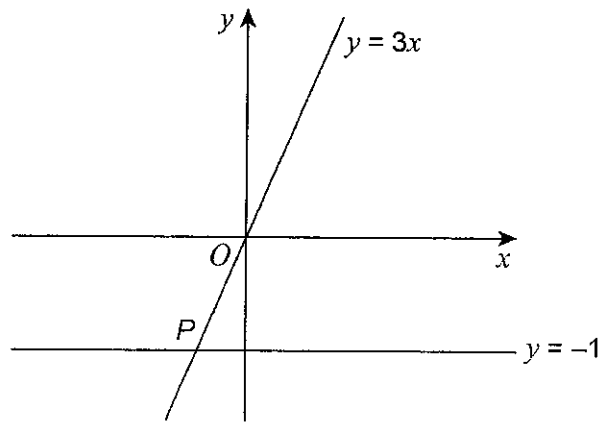
Compare the population densities of the UK and Germany.

[3 marks]



- 13 Two straight lines intersect at point P .

Video 20



Circle the coordinates of P .

[1 mark]

$(-3, -1)$

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

$(-1, -3)$

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

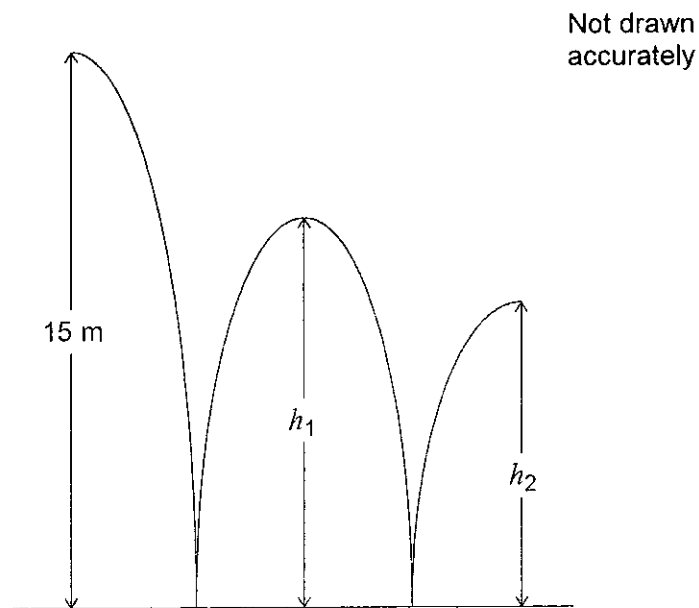
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14

A ball is thrown from a height of 15 metres.
It bounces to height h_1 , then to height h_2 as shown.



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

Videos 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

Turn over ►



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

Video 117

[2 marks]

Answer _____

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

Video 118

[2 marks]

Answer _____

Turn over for the next question

7

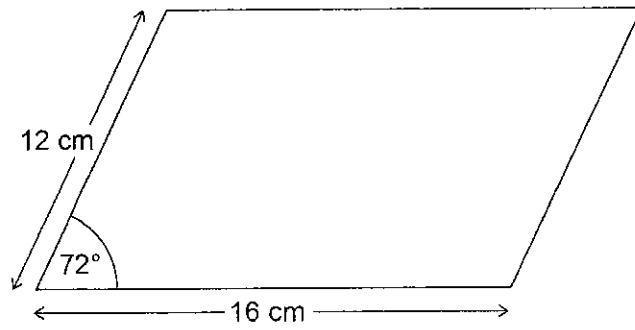
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17

Work out the area of the parallelogram.

Video 330 / 44

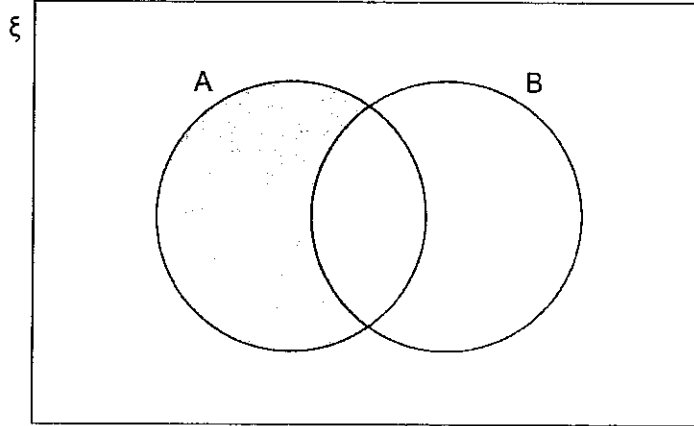
Not drawn
accurately

[3 marks]

Answer _____ cm^2 

18 (a)

Video 380



Which of these represents the shaded region?

Circle your answer.

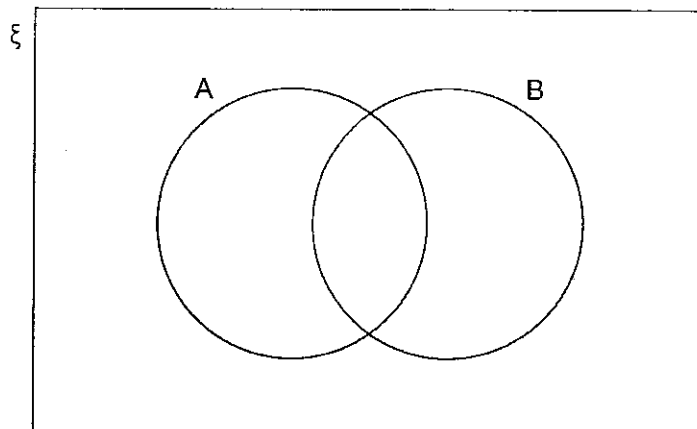
[1 mark]

A

 B' $A \cap B'$ $A \cup B'$

18 (b)

Video 370



Which of these represents the shaded region?

Circle your answer.

[1 mark]

 $(A \cup B)'$ $(A \cap B)'$ $A' \cap B$ $A' \cup B'$ 

19

The length of a rectangle is five times the width.

The area of the rectangle is 1620 cm^2

Video 45

Not drawn
accurately

Work out the width of the rectangle.

[3 marks]

Answer _____ cm



20

A stone is thrown upwards with a speed of v metres per second.
The stone reaches a maximum height of h metres.

h is directly proportional to v^2

Video 254

When $v = 10$, $h = 5$

Work out the maximum height reached when $v = 24$

[4 marks]

Answer _____ m

Turn over for the next question

7

Turn over ►

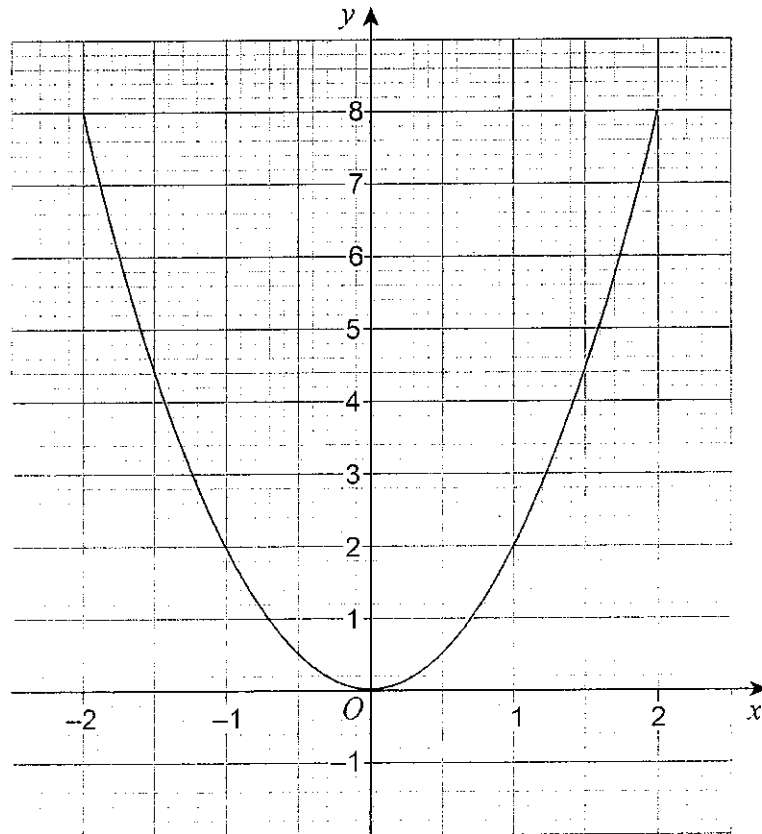


21 (a) Meera is using a **graphical** method to solve $2x^2 - 3x = 0$

She draws the graph of $y = 2x^2$ and a straight line graph on the same grid.

Here is the graph of $y = 2x^2$

Video 267d



Complete her method to solve $2x^2 - 3x = 0$

[2 marks]

Answer _____



- 21 (b) Levi is solving $2x^2 + 5x = 0$
He uses this method.

Video 266

$$2x^2 + 5x = 0 \quad \text{subtract } 5x \text{ from both sides}$$

$$2x^2 = -5x \quad \text{divide both sides by } x$$

$$2x = -5 \quad \text{divide both sides by 2}$$

$$x = -2.5$$

Evaluate his method and his answer.

[2 marks]

Turn over for the next question

4

Turn over ►

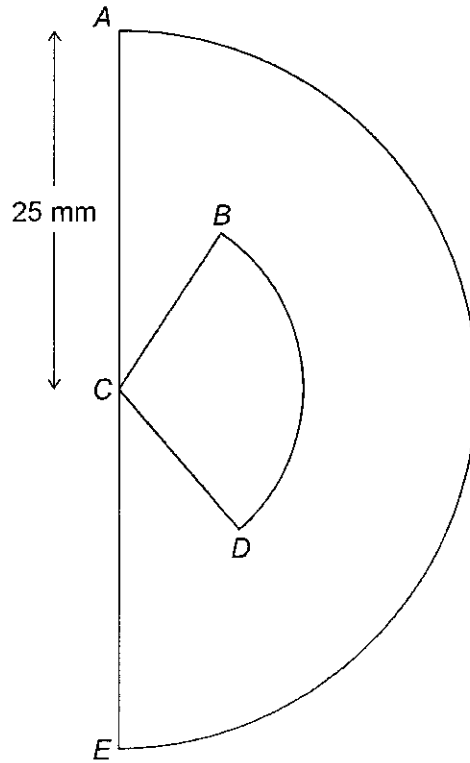


22

The cross section of an earring is a semicircle, centre C , radius 25 mm

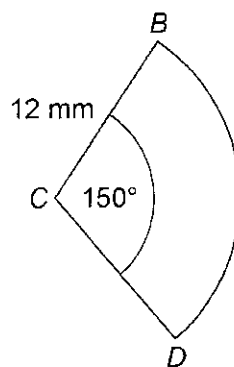
The earring is black and white.

The shaded area is black.



Not drawn
accurately

Sector BCD is white and has radius 12 mm

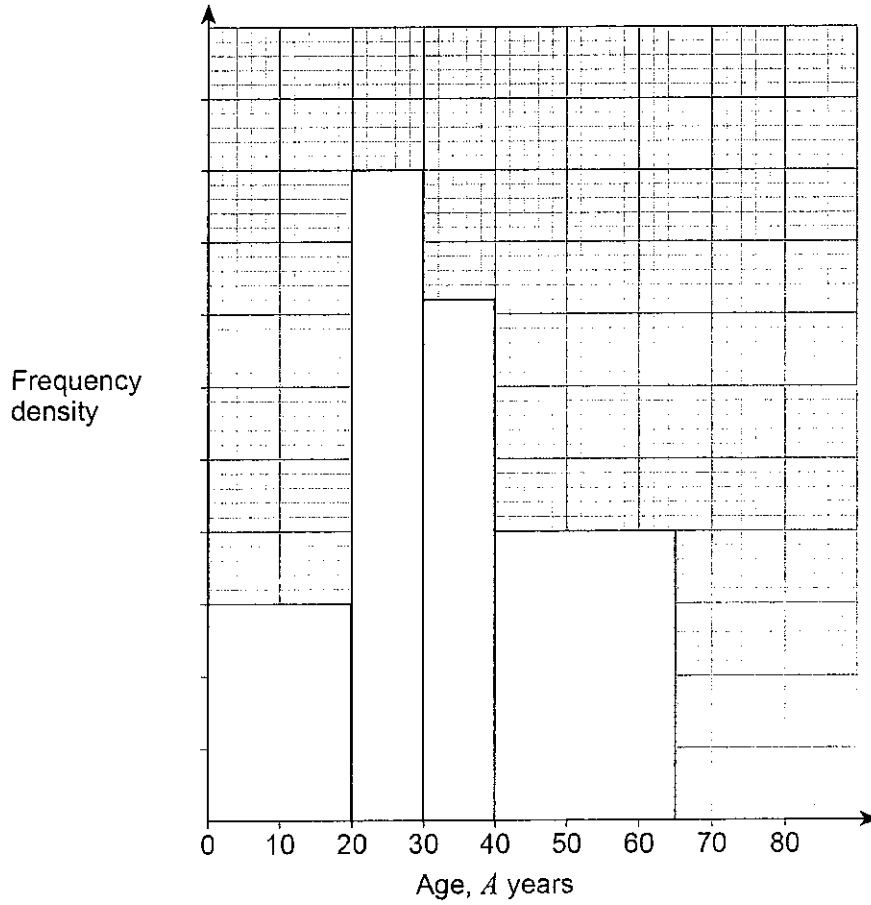


Not drawn
accurately



23 Here is some information about a tennis club.

Video 159/157 Members of a tennis club



There are 30 members with $A < 20$

There are 12 members with $65 \leq A < 80$

There are no members with $A \geq 80$

23 (a) Complete the histogram.

[3 marks]



23 (b) Work out the total number of members of the club.

Video 158

[2 marks]

Answer _____

Turn over for the next question

5

Turn over ►



24

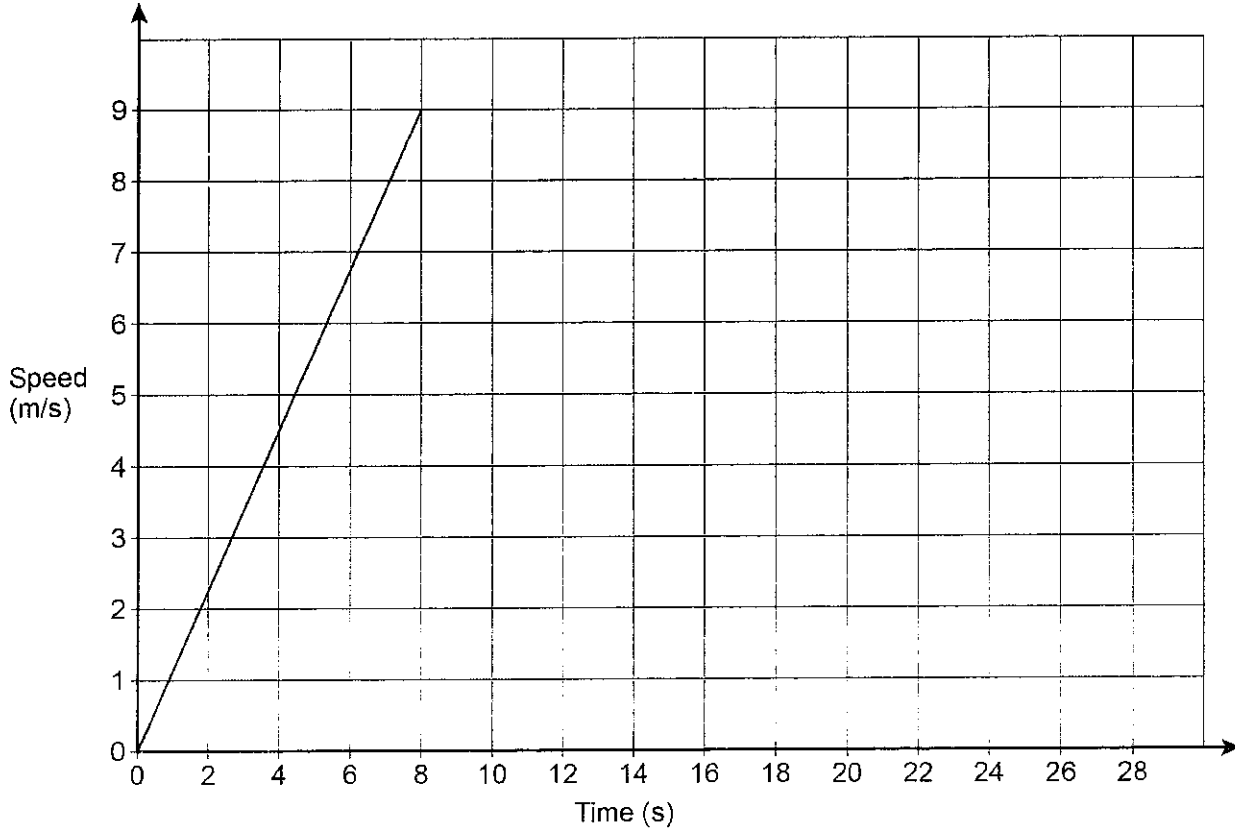
Beth ran a 200 metre race.

Here is a graph of the first 8 seconds of her race.

She completed the race at a constant speed of 9 m/s

Video 389

Speed-time graph for Beth



Amy completed the race in 27 seconds.

Did Beth finish before Amy?

You **must** show your working.**[3 marks]**

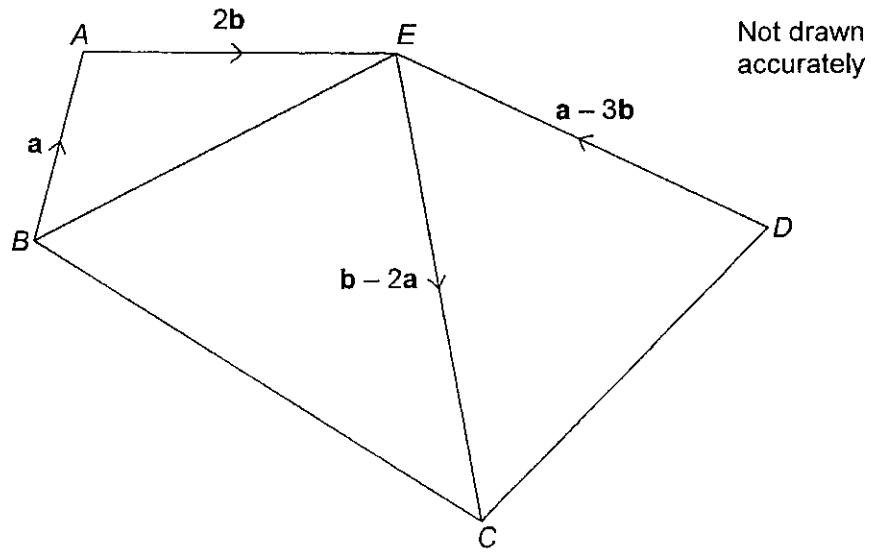
Answer _____



26

$ABCDE$ is a pentagon.

Video 353 / 2



Show that $BCDE$ is a parallelogram.

[3 marks]



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