

Write your name here

Surname

Other Names

Mathematics

**November 2017 Paper 1 (Non Calculator)
Part 1 (First half of the paper)
Edexcel Higher Tier**

Time: 45 minutes

Q	Topic	Max Mark	My Marks
1	Prime Factors	2	
2	Forming and Solving Equations	4	
3	Angles in Parallel Lines	4	
4	The Area of a Circle	4	
5	Estimate the Mean, Averages	4	
6	Forming and Solving Equations	4	
7	Quadratic Graphs	1	
8	Ordering Recurring Decimals	2	
9	Compound Measures, Speed	5	
10	Negative and Fractional Indices	3	
11	Simultaneous Equations	4	
12	Box Plots	5	
	Total	42	

For worked solutions and video solutions visit mathsgenie.co.uk

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 Write 36 as a product of its prime factors.

.....
(Total for Question 1 is 2 marks)

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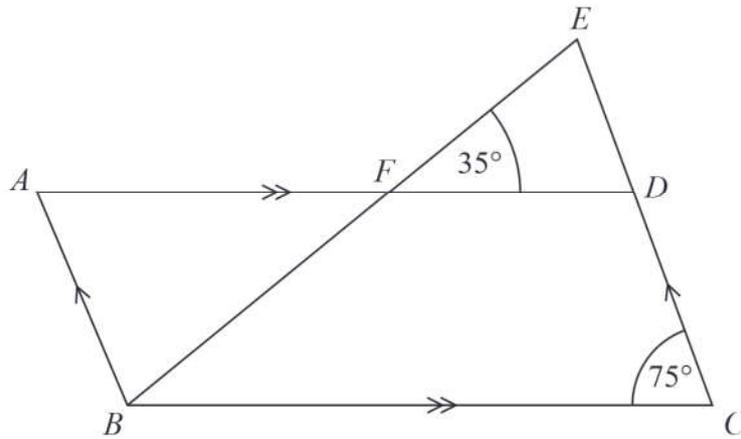
- 2 Kiaria is 7 years older than Jay.
Martha is twice as old as Kiaria.
The sum of their three ages is 77

Find the ratio of Jay's age to Kiaria's age to Martha's age.

.....
(Total for Question 2 is 4 marks)



3



$ABCD$ is a parallelogram.

EDC is a straight line.

F is the point on AD so that BFE is a straight line.

Angle $EFD = 35^\circ$

Angle $DCB = 75^\circ$

Show that angle $ABF = 70^\circ$

Give a reason for each stage of your working.

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(Total for Question 3 is 4 marks)

4

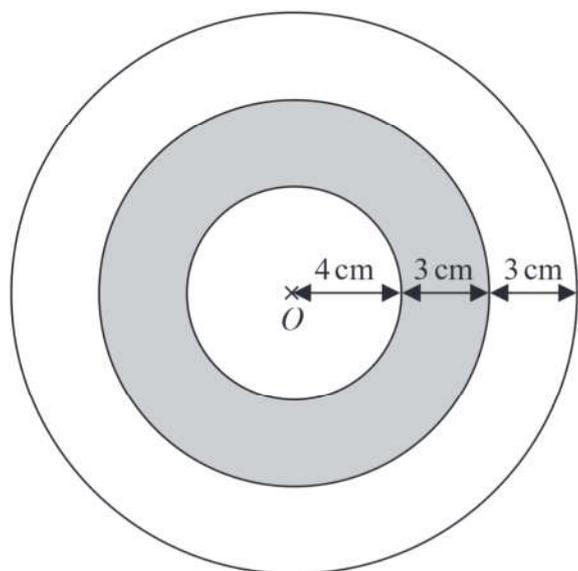


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4 The diagram shows a logo made from three circles.



Each circle has centre O .

Daisy says that exactly $\frac{1}{3}$ of the logo is shaded.

Is Daisy correct?
You must show all your working.

(Total for Question 4 is 4 marks)



- 5 The table shows information about the weekly earnings of 20 people who work in a shop.

Weekly earnings (£ x)	Frequency
$150 < x \leq 250$	1
$250 < x \leq 350$	11
$350 < x \leq 450$	5
$450 < x \leq 550$	0
$550 < x \leq 650$	3

- (a) Work out an estimate for the mean of the weekly earnings.

£.....
(3)

Nadiya says,

“The mean may **not** be the best average to use to represent this information.”

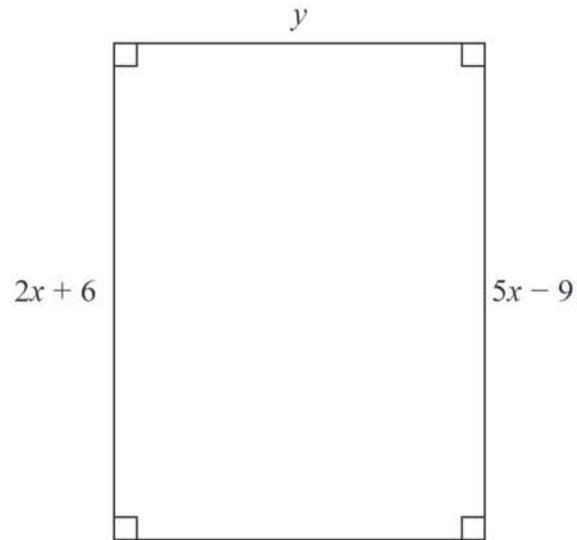
- (b) Do you agree with Nadiya?
You must justify your answer.

.....
.....
(1)

(Total for Question 5 is 4 marks)



6 Here is a rectangle.



All measurements are in centimetres.

The area of the rectangle is 48 cm^2 .

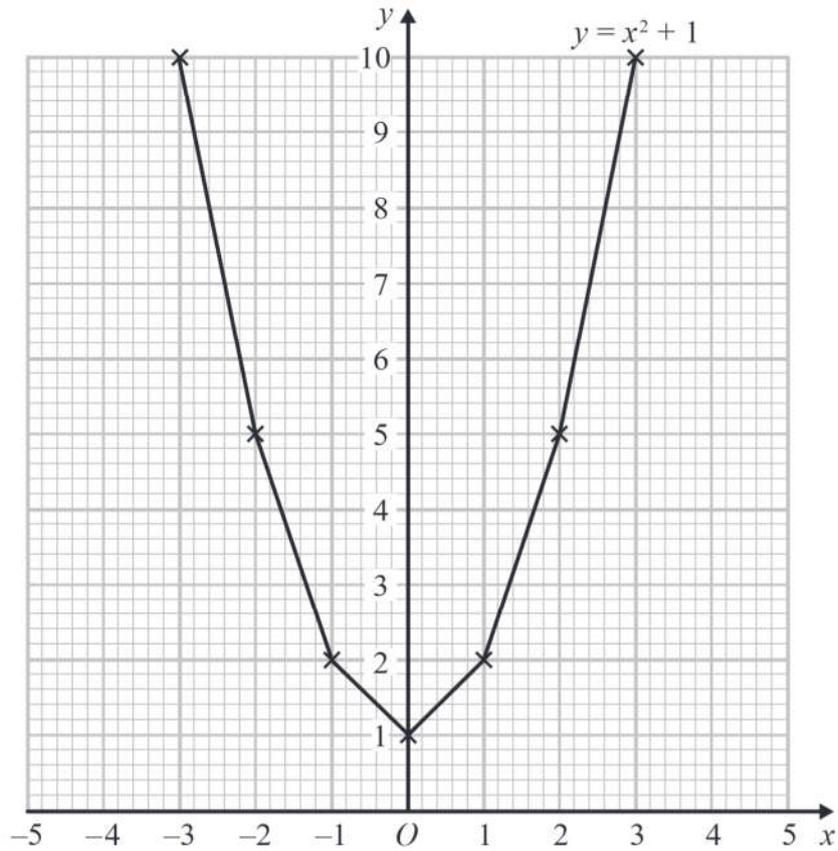
Show that $y = 3$

(Total for Question 6 is 4 marks)



7 Brogan needs to draw the graph of $y = x^2 + 1$

Here is her graph.



Write down one thing that is wrong with Brogan's graph.

.....

.....

(Total for Question 7 is 1 mark)



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8 Write these numbers in order of size.
Start with the smallest number.

$0.2\dot{4}\dot{6}$

$0.24\dot{6}$

$0.\dot{2}4\dot{6}$

0.246

(Total for Question 8 is 2 marks)

9 James and Peter cycled along the same 50 km route.

James took $2\frac{1}{2}$ hours to cycle the 50 km.

Peter started to cycle 5 minutes after James started to cycle.
Peter caught up with James when they had both cycled 15 km.

James and Peter both cycled at constant speeds.

Work out Peter's speed.

..... km/h

(Total for Question 9 is 5 marks)



10 (a) Write down the value of $100^{\frac{1}{2}}$

.....
(1)

(b) Find the value of $125^{\frac{2}{3}}$

.....
(2)

(Total for Question 10 is 3 marks)

11 3 teas and 2 coffees have a total cost of £7.80
5 teas and 4 coffees have a total cost of £14.20

Work out the cost of one tea and the cost of one coffee.

tea £.....

coffee £.....

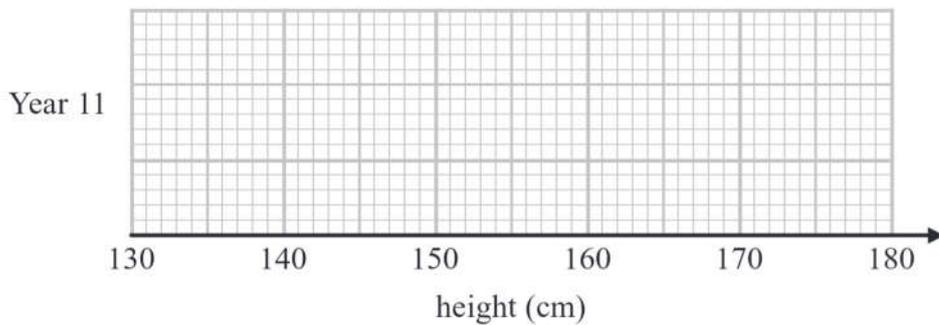
(Total for Question 11 is 4 marks)



12 The table shows information about the heights, in cm, of a group of Year 11 girls.

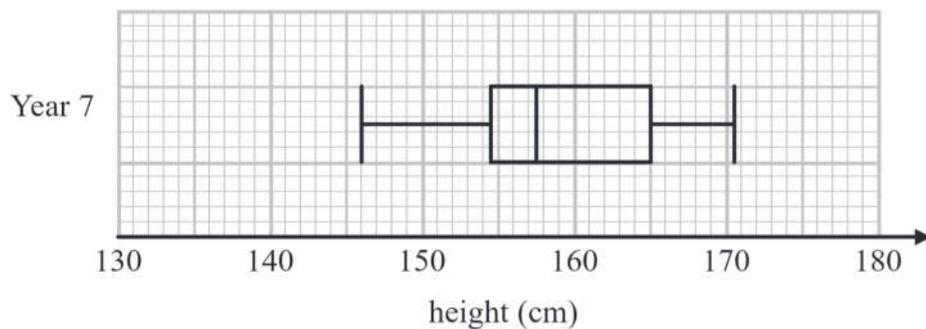
	height (cm)
least height	154
median	165
lower quartile	161
interquartile range	7
range	20

(a) Draw a box plot for this information.



(3)

The box plot below shows information about the heights, in cm, of a group of Year 7 girls.



(b) Compare the distribution of heights of the Year 7 girls with the distribution of heights of the Year 11 girls.

(2)

(Total for Question 12 is 5 marks)

