

Write your name here

Surname

Other Names

Mathematics

November 2018 Paper 2 (Calculator Allowed)
Part 1 (First half of the paper)
Edexcel Higher Tier

Time: 45 minutes

Q	Topic	Max Mark	My Marks
1	Venn Diagrams	6	
2	Scatter Graphs	2	
3	Angles in Parallel Lines	4	
4	Compound Interest	5	
5	Area of a Trapezium, Proportion	5	
6	The Gradient of a Line	3	
7	Standard Form	3	
8	Combinations of Transformations	3	
9	Error Intervals	2	
10	Sharing Ratio, Percentage Change (Profit)	5	
11	The Product Rule for Counting	3	
	Total	41	

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

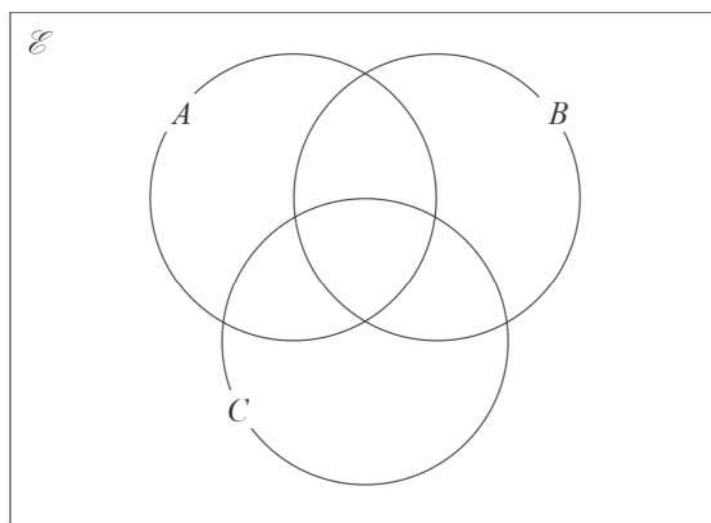
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 $\mathcal{E} = \{\text{even numbers between 1 and 25}\}$
 $A = \{2, 8, 10, 14\}$
 $B = \{6, 8, 20\}$
 $C = \{8, 18, 20, 22\}$

(a) Complete the Venn diagram for this information.



(4)

A number is chosen at random from \mathcal{E} .

(b) Find the probability that the number is a member of $A \cap B$.

.....
(2)

(Total for Question 1 is 6 marks)

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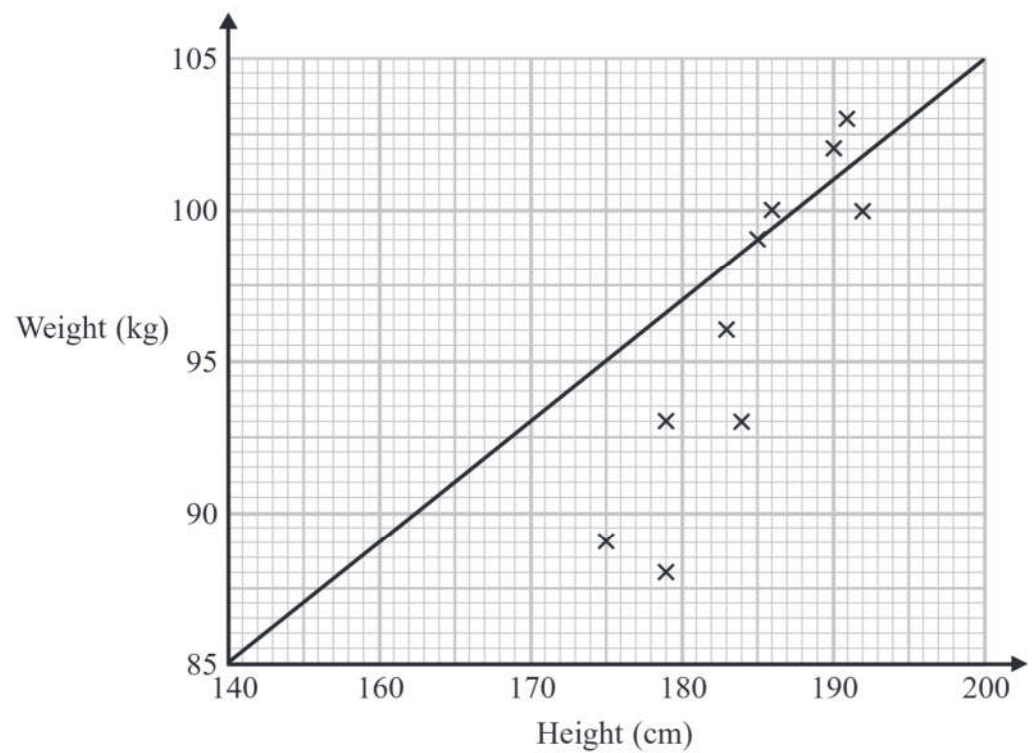


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2 Sean has information about the height, in cm, and the weight, in kg, of each of ten rugby players. He is asked to draw a scatter graph and a line of best fit for this information. Here is his answer.



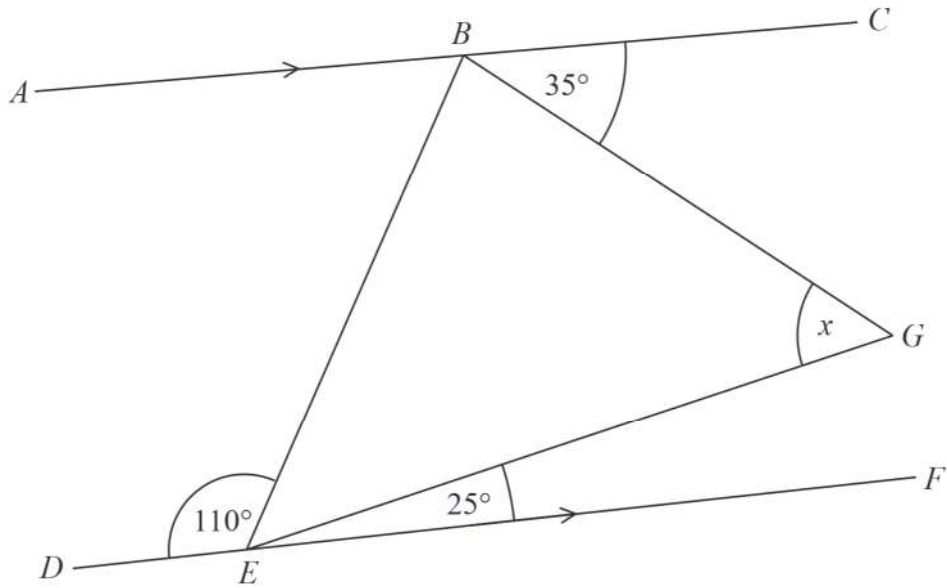
Sean has plotted the points accurately. Write down two things that are wrong with his answer.

- 1
-
- 2
-

(Total for Question 2 is 2 marks)



3 BEG is a triangle.



ABC and DEF are parallel lines.

Work out the size of angle x .

Give a reason for each stage of your working.

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(Total for Question 3 is 4 marks)



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- 4 Northern Bank has two types of account.
Both accounts pay compound interest.

Cash savings account
Interest
2.5% per annum

Shares account
Interest
3.5% per annum

Ali invests £2000 in the cash savings account.
Ben invests £1600 in the shares account.

- (a) Work out who will get the most interest by the end of 3 years.
You must show all your working.

(4)

In the 3rd year the rate of interest for the shares account is changed to 4% per annum.

- (b) Does this affect who will get the most interest by the end of 3 years?
Give a reason for your answer.

.....

.....

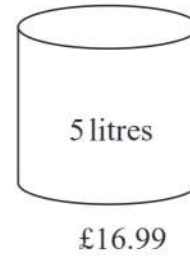
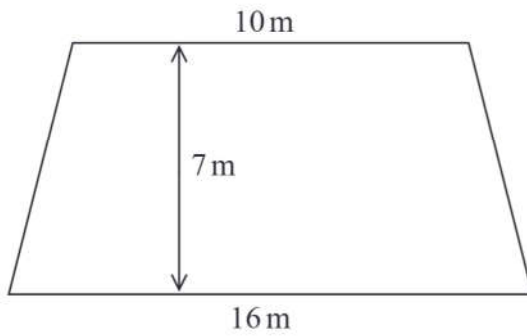
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(1)

(Total for Question 4 is 5 marks)



- 5 The diagram shows a floor in the shape of a trapezium.



John is going to paint the floor.

Each 5 litre tin of paint costs £16.99
1 litre of paint covers an area of 2 m^2

John has £160 to spend on paint.

Has John got enough money to buy all the paint he needs?
You must show how you get your answer.

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(Total for Question 5 is 5 marks)



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- 6 A is the point with coordinates $(5, 9)$
 B is the point with coordinates $(d, 15)$

The gradient of the line AB is 3

Work out the value of d .

.....
(Total for Question 6 is 3 marks)



7 (a) Write the number 0.000 086 23 in standard form.

.....
(1)

(b) Work out $\frac{3.2 \times 10^3 + 5.1 \times 10^{-2}}{4.3 \times 10^{-4}}$

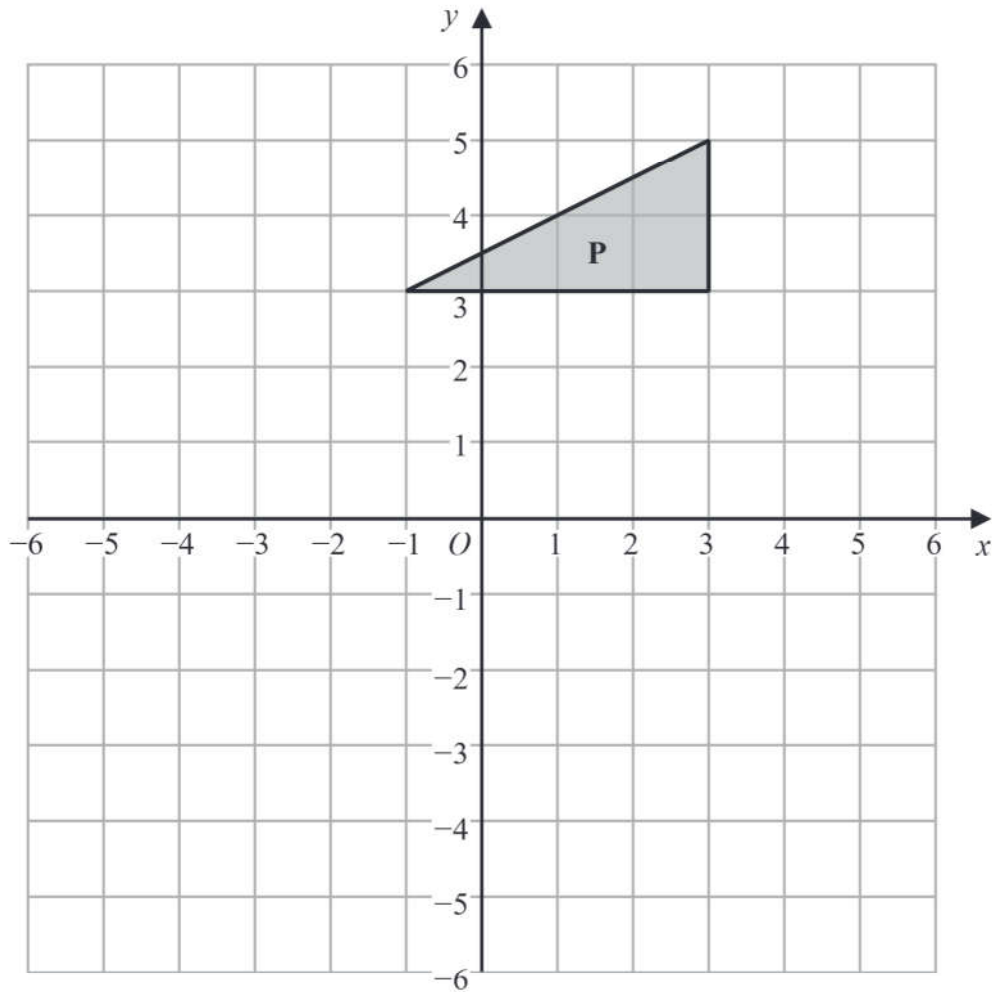
Give your answer in standard form, correct to 3 significant figures.

.....
(2)

(Total for Question 7 is 3 marks)



8



Triangle **P** is reflected in the line $y = -x$ to give triangle **Q**.
 Triangle **Q** is reflected in the line $x = -1$ to give triangle **R**.

Describe fully the single transformation that maps triangle **R** to triangle **P**.

(Total for Question 8 is 3 marks)

9 Martin truncates the number N to 1 digit.
 The result is 7

Write down the error interval for N .

(Total for Question 9 is 2 marks)



- 10 Robert makes 50 litres of green paint by mixing litres of yellow paint and litres of blue paint in the ratio 2:3

Yellow paint is sold in 5 litre tins.
Each tin of yellow paint costs £26

Blue paint is sold in 10 litre tins.
Each tin of blue paint costs £48

Robert sells all the green paint he makes in 10 litre tins.
He sells each tin of green paint for £66.96

Work out Robert's percentage profit on each tin of green paint he sells.

.....%

(Total for Question 10 is 5 marks)



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11 In a restaurant there are

- 9 starter dishes
- 15 main dishes
- 8 dessert dishes

Janet is going to choose one of the following combinations for her meal.

- a starter dish and a main dish
- or a main dish and a dessert dish
- or a starter dish, a main dish and a dessert dish

Show that there are 1335 different ways to choose the meal.

(Total for Question 11 is 3 marks)

