

Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Write $5^{17} \times 5^2$ as a single power of 5

.....
(1)

(b) Write 800 as a product of its prime factors.
Show your working clearly.

.....
(2)

(Total for Question 1 is 3 marks)

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- 2 The table gives information about the amount of money, in £, that Fiona spent in a grocery store each week during 2019

Amount spent (£ x)	Frequency
$0 \leq x < 20$	5
$20 \leq x < 40$	11
$40 \leq x < 60$	8
$60 \leq x < 80$	19
$80 \leq x < 100$	9

Work out an estimate for the total amount of money that Fiona spent in the grocery store during 2019

£.....

(Total for Question 2 is 3 marks)



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3 Three tins, A , B and C , each contain buttons.

Tin A contains x buttons.

Tin B contains 4 times the number of buttons that tin A contains.

Tin C contains 7 fewer buttons than tin A .

The total number of buttons in the three tins is 137

Work out the number of buttons in tin C .

.....
(Total for Question 3 is 4 marks)



4 The diagram shows a rectangle and a diagonal of the rectangle.

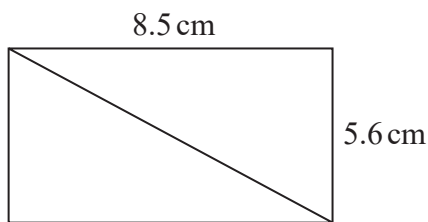


Diagram **NOT** accurately drawn

Work out the length of the diagonal of the rectangle.
Give your answer correct to 1 decimal place.

..... cm

(Total for Question 4 is 3 marks)

5 A plane takes 3 hours 36 minutes to fly from the Cayman Islands to New York.
The plane flies a distance of 2470 km.

Work out the average speed of the plane in km/h.
Give your answer correct to the nearest whole number.

..... km/h

(Total for Question 5 is 3 marks)

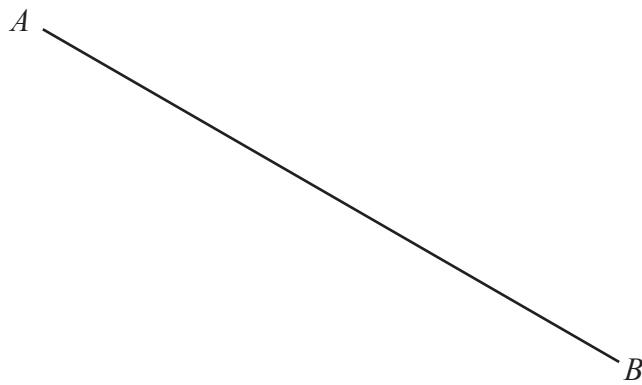


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- 6 Use ruler and compasses only to construct the perpendicular bisector of the line AB .
You must show all your construction lines.



(Total for Question 6 is 2 marks)



P 5 9 8 1 7 A 0 7 2 8

7 Solve the simultaneous equations

$$\begin{aligned} 3x + 5y &= 6 \\ 7x - 5y &= -11 \end{aligned}$$

Show clear algebraic working.

$x =$

$y =$

(Total for Question 7 is 3 marks)

8 Hamish buys a new car for \$20 000
The car depreciates in value by 19% each year.

Work out the value of the car at the end of 3 years.
Give your answer to the nearest \$.

$\$$

(Total for Question 8 is 3 marks)



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9 The diagram shows a box in the shape of a cuboid.

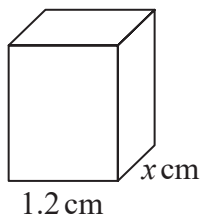


Diagram **NOT** accurately drawn

The box is put on a table.

The face of the box in contact with the table has length 1.2 metres and width x metres.

The force exerted by the box on the table is 27 newtons.

The pressure on the table due to the box is 30 newtons/m²

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Work out the value of x .

$x = \dots\dots\dots$

(Total for Question 9 is 3 marks)



10 The table shows information about the surface area of each of the world's oceans.

Ocean	Surface area in square kilometres
Pacific	1.56×10^8
Indian	6.86×10^7
Southern	2.03×10^7
Arctic	1.41×10^7
Atlantic	1.06×10^8

- (a) Work out the difference, in square kilometres, between the surface area of the Atlantic Ocean and the surface area of the Indian Ocean.
Give your answer in standard form.

..... square kilometres
(2)

The surface area of the Pacific Ocean is k times the surface area of the Arctic Ocean.

- (b) Work out the value of k .
Give your answer correct to the nearest whole number.

$k =$
(1)

(Total for Question 10 is 3 marks)

