

AQA Mock Test Papers

Paper2 - Test1

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

I declare this is my own work.

GCSE Mathematics

Higher tier - Paper 2 - Calculator

H

Materials

For this paper you must have:

- a calculator
- mathematical instruments
- the Formulae Sheet (enclosed).



Time allowed: 1 hour 30 minutes

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil. Fill in the boxes at the top of this page. Answer all questions. You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets. The maximum mark for this paper is 80. You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

Advice

In all calculations, show clearly how you work out your answer.

For Examiner's Use

Pages	Mark
2-3	
4-5	
6-7	
8-9	
10-11	
12-13	
14-15	
16-17	
18-19	
20-21	
22-23	
24	
TOTAL	

Answer all questions in the spaces provided.

Do not write
outside the
box

- 1 Work out $\frac{4^5 \times 4}{\sqrt{841} - \sqrt{625}}$
Circle your answer. [1 mark]

1025

1024

1124

1125

- 2 Circle the expression that means the probability of A and not B. [1 mark]
- $P(A' \cup B)$ $P(A \cup B)$ $P(A' \cap B)$ $P(A \cap B)$

- 3 What is 50 as a percentage of 20?
Circle your answer [1 mark]

20%

50%

200%

250%

4 Circle the fraction that is equivalent to 5.375

$$\frac{37}{4}$$

$$\frac{14}{9}$$

$$\frac{43}{8}$$

$$\frac{23}{7}$$

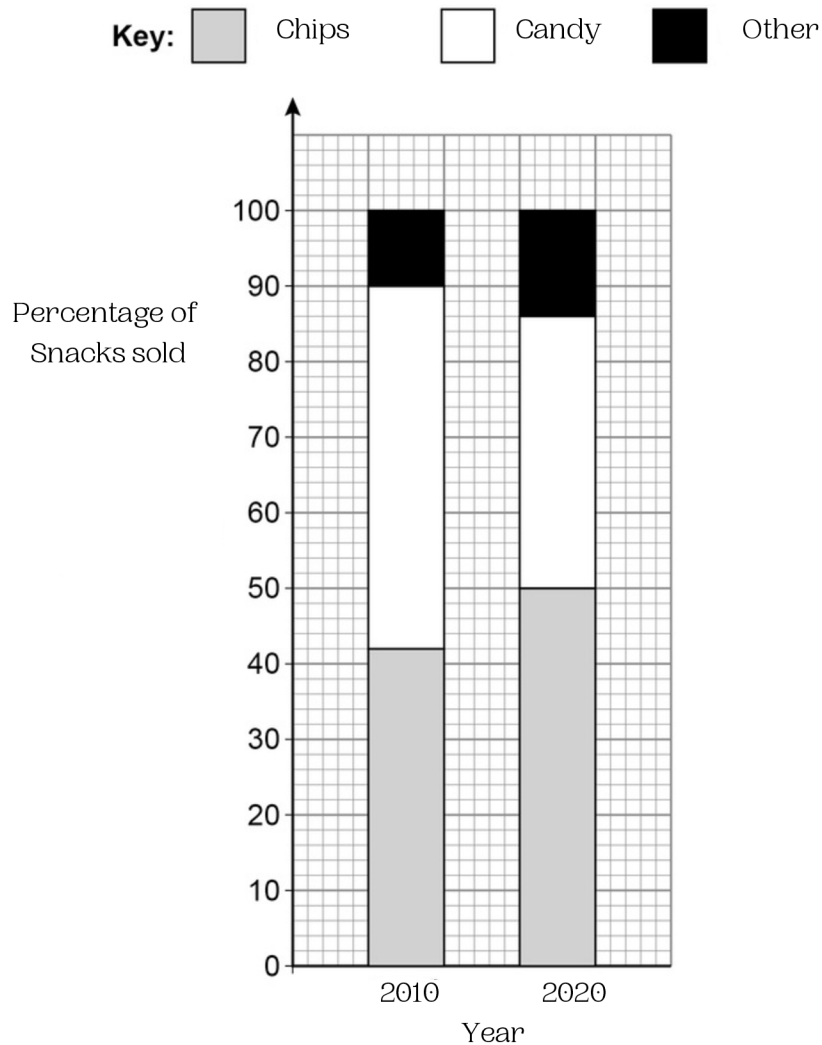
[1 mark]

5 Find the lowest common multiple (LCM) of 45 and 60.

[2 marks]

Answer _____

- 6 The composite bar chart shows information about the percentage of snacks sold by a shop in 2010 and 2020.



- 6 (a) In 2010, the shop sold a total of 30,000 snacks.

How many more candies than chips were sold?

[2 marks]

Answer _____

6 (b) Were more chips sold by the shop in 2020 than in 2010?

Tick a box.

Yes

No

Cannot tell

Give a reason for your answer.

[1 mark]

7 (a) m is a whole number between 20 and 30.

The square root of m is 5, to the nearest whole number.

Work out the largest possible value of m .

[2 marks]

Answer _____

7 (b) Ivy tries to solve $x^2 = 64$

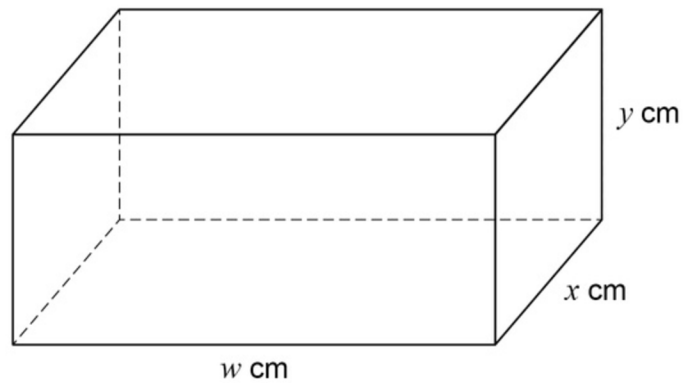
She says,

“The only possible value of x is 8”

Give a reason why she is not correct.

[1 mark]

- 8 (a) Here is a cuboid.
 w , x and y are different whole numbers.



The total length of all the edges of the cuboid is 100 cm

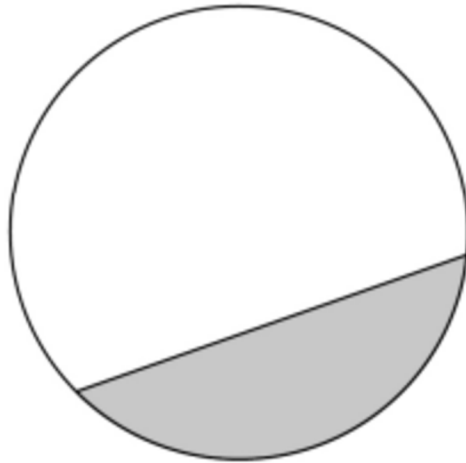
The volume is greater than 500 cm^3

Work out one possible set of values for w , x and y .

[2 marks]

$w =$ _____ $x =$ _____ $y =$ _____

8 (b) Here is a Circle.



Circle the word that describes the shaded part.

[1 mark]

segment

chord

sector

arc

9 Here is a sequence.

100, 90, 80, 70, 60

Circle the expression for the n th term of the sequence.

[1 mark]

$10n + 90$

$100 - 10n$,

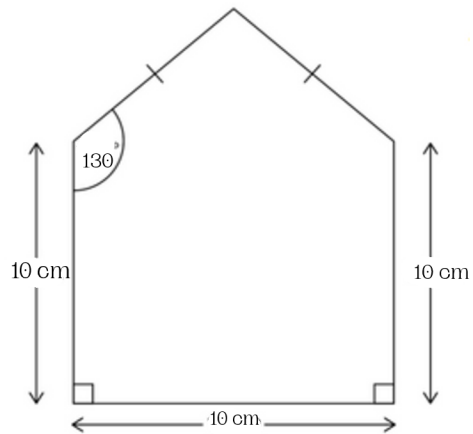
$90 - 10n$,

$10n - 100$

Answer _____

10

A pentagon is made from a square and an isosceles triangle.



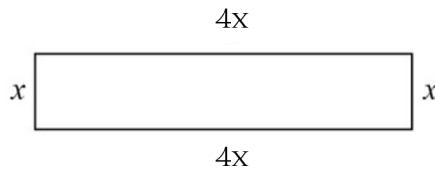
[4 marks]

Work out the perimeter of the pentagon.

Answer _____

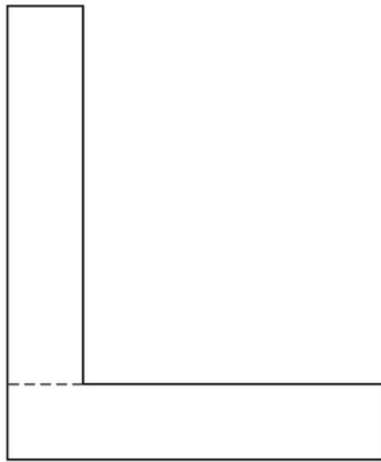
12

The length of this rectangle is 4 times the width.



Not drawn
accurately

Two of these rectangles are joined, with no overlap, to make this L-shape.



Not drawn
accurately

The perimeter of the L-shape is 86.4 cm

Work out the value of the perimeter of one of the rectangles.

[4 marks]

Answer _____ cm

16 Find the value of $\frac{4x^2}{16x^2+8}$

[1 mark]

Answer _____

17 A and B are similar cuboids.

surface area of A : surface area of B = 9 : 16

Work out volume of A : volume of B

Circle your answer.

[1 mark]

4 : 5

16 : 25

64 : 125

27 : 64

7

Turn over ►

18 (b) Solve $10x = 70.4 + 2x$

[2 marks]

Answer

19 A block of gold has a mass of 1.75 kilograms and a volume of 125 cm^3 .

Work out the density of the block of gold.
Give your answer in grams per cubic centimetre.

[2 marks]

Answer _____ g/cm³

8

Turn over ►

20 $f(x) = 4 - x$ and $g(x) = 2x + 8$

Simplify $f(2x) + g(x - 1)$

[3 marks]

Answer

- 21 (a) A container holds 18 pencils.
7 are black, 6 are blue, and 5 are red.

Alice picks a pencil at random and puts it back in the container.
Jake then picks a pencil at random and puts it back in the container.

[2 marks]

Emily then picks a pencil at random.

Calculate the probability that they all pick a black pencil.

Answer

- 21 (b) Factorise $4x^2 - 3x - 10$

[2 marks]

Answer

7

Turn over ►

22 The population of bees in a field is initially 3,500.

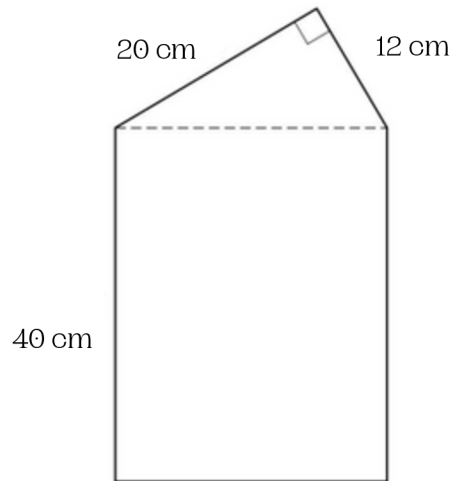
[2 marks]

Assume that the population increases by 10% each day.

Show that after 19 days the population would be greater than 20,000.

Answer

23 A shape is made by joining a right-angled triangle to a rectangle.



[5 marks]

Work out the area of the shape.

Answercm²

7

Turn over ►

24 Match each sequence to its description. One has been done for you.

[4 marks]

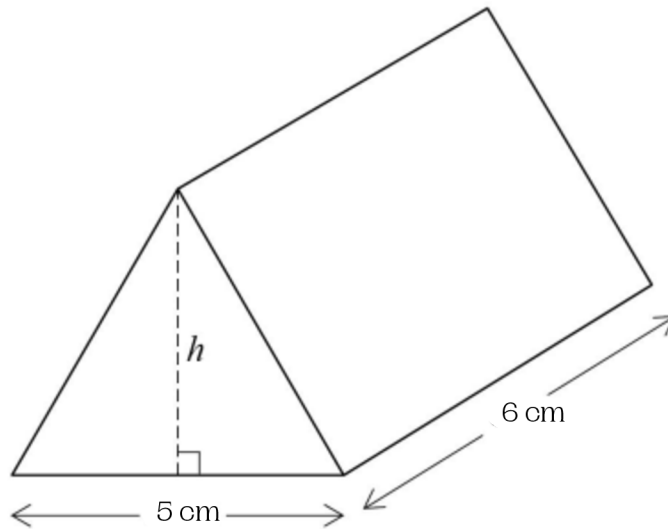
1 1 2 3 5 8	Arithmetic progression
1 2 4 8 16 32	Geometric progression
1 2 3 4 5 6	Fibonacci sequence
1 3 6 10 15 21	Triangular numbers
1 4 9 16 25 36	Cube numbers
1 8 27 64 125 216	Square numbers

24 (b) Which of these numbers is four less than a square number?
Circle your answer.

8 15 21 34 [1 mark]

- 25 The diagram shows a prism with volume 30 cm^3
The height of the triangular cross section is h

Not drawn
accurately



[3 marks]

Work out the height, h

Answer

26

The value of a house is £350 000

The value is expected to increase by 2% each year.

Work out the expected value after 4 years.

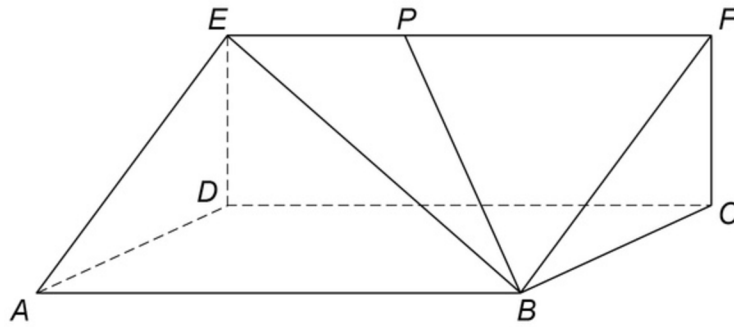
Give your answer to 2 significant figures.

You must show your working.

[4 marks]

Answer £ _____

28

 $ABCDEF$ is a triangular prism. P is a point on EF . $EB = 30$ cmAngle $EBP = 33^\circ$ Angle $EPB = 115^\circ$ Work out the length of EP .

[2 marks]

Answer _____ cm

END OF QUESTIONS