

Year 9 Maths Practice Paper 1

This paper covers: Percentages, Fractions, Straight line graphs, Algebraic manipulation, Non-linear graphs, Sets and probability, Area and volume, Ratio and proportion, Pythagoras' theorem, Transformations.

TIME ALLOWED
40 minutes
TOTAL MARKS
31
QUESTIONS
24

Name _____

Class _____ Date _____

INSTRUCTIONS

- Use black ink or a black ball-point pen.
- Answer every question in the space given.
- You may use a calculator.
- Show your working. Some marks are given for a correct method, even when the answer is wrong.

INFORMATION

- The marks for each question are shown in brackets, for example [1 mark].
- The questions start easier and get harder as you go.
- Diagrams are not drawn accurately unless the question says so.
- Check your answers if you have time at the end.

FOR THE MARKER

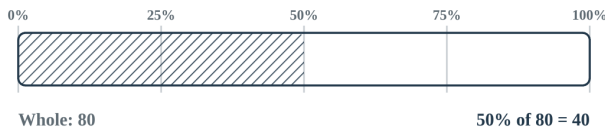
Score _____ **out of 31**

Percentage _____ %

01 Questions

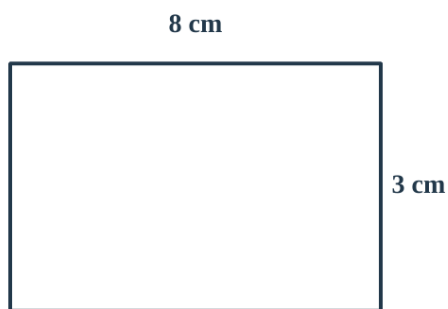
Answer every question. Show your working.

- 1** The bar stands for £80, the price before a sale. The filled part is the 50% taken off. [1 mark]
What is the sale price?



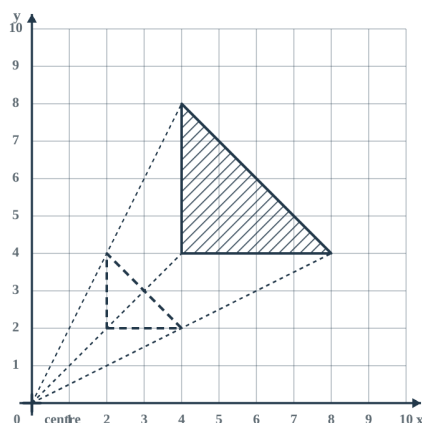
ANSWER

- 2** The sides of this rectangle are marked. What is its area in square centimetres? [1 mark]



ANSWER

- 3** The dashed triangle is enlarged from (0, 0) along the rays to give the solid one. Each side of the image is how many times as long? [1 mark]



ANSWER

- 4 The board shows an expression and the values to put in. What is its value? [1 mark]

$x = 4$

$y = 9$

$2x - y$

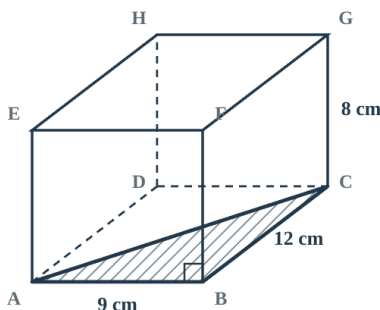
ANSWER

- 5 The shaded triangle lies on the base of the cuboid. Which two edges are its shorter sides? Circle your answer. [1 mark]

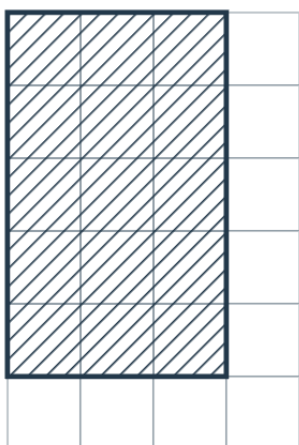
☐ 12 cm and 8 cm

☐ 9 cm and 12 cm

☐ 9 cm and 8 cm



- 6 The shaded rectangle covers $\frac{3}{4}$ of the width of this grid and $\frac{5}{6}$ of its height. What fraction of the whole grid is shaded? Write your answer as a fraction. [1 mark]



ANSWER

- 7 A spinner was spun and each result tallied. How many times did it land on green? [1 mark]

Colour	Tally	Frequency
Red		6
Blue		9
Green		4

ANSWER

- 8 To work out $\frac{7}{8} + \frac{4}{7}$, both fractions are written with the same bottom number. What is the smallest bottom number that works? [2 marks]

ANSWER

- 9 A fair dice is rolled. What is the probability of a prime number? Give a fraction in its simplest form. Write your answer as a fraction. [1 mark]

ANSWER

- 10 8 out of 32 is 25%. Write 8 out of 32 as a fraction in its simplest form. Write your answer as a fraction. [1 mark]

ANSWER

- 11 After a 15% increase, a price is £276. What was the price before the increase? [1 mark]

ANSWER

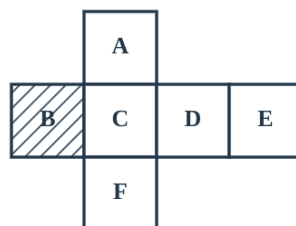
- 12 A cylinder has a radius of 3 centimetres and a height of 7 centimetres. What is its surface area, to one decimal place? [2 marks]

ANSWER

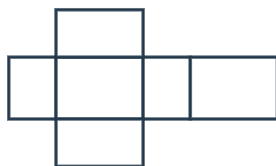
- 13 Complete the factorisation $(x + 1)(x + ?) = x^2 + 5x + 4$. What number is missing? [1 mark]

ANSWER

- 14 One square of this cube net is shaded. Which square ends up opposite it once the net is folded? Write the letter of the face opposite the shaded one. [1 mark]

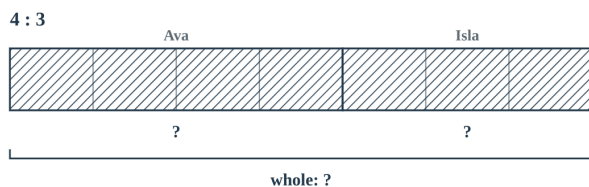


- 15 The cuboid is 7 by 2 by 3. Which faces of the net have an area of 14 square units? [1 mark]
Pick both. Write the letters of the faces.



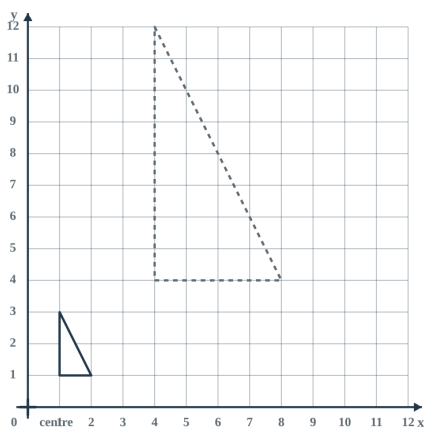
Its net

- 16 Ava and Isla share some sweets in the ratio 4 : 3. Ava gets 32. How much do they share altogether? [2 marks]

[illegible]

ANSWER

- 17 The dashed outline is the image. Choose the scale factor that makes the enlargement from the origin land on it. Write the scale factor. [1 mark]



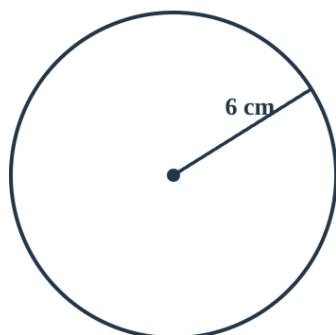
- 18 3 friends each buy a drink for £5 and a cake costing £c. Write the total cost, expanded, as an expression in c. [2 marks]

ANSWER

- 19 A rectangle has area $4x + 24$ and one side of length 4. Write the length of the other side. [2 marks]

ANSWER

- 20 A semicircle is cut from this circle along its diameter. What is the area of the semicircle, to one decimal place? [2 marks]



ANSWER

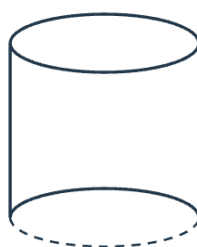
- 21 Is the point $(-3, -3)$ on the line $y = x$? Circle your answer. [1 mark]
☐ No ☐ Yes

- 22** One triangular prism has a surface area of 144 square centimetres. A second triangular prism has every length twice as big. What is its surface area in square centimetres? [2 marks]

ANSWER

- 23** A line crosses the y-axis at 2 and goes down 2 for every 1 across. What is its equation? Circle your answer. [1 mark]
- ☐ $y = 2x + 2$ ☐ $y = -2x + 2$ ☐ $y = 2x - 2$

- 24** Is a cylinder a prism? Circle your answer. [1 mark]
- ☐ No, it has no cross-section
- ☐ Yes, its cross-section is the same all the way along
- ☐ No, only triangular solids are prisms



The solid

Practice Paper 1

FOR THE MARKER

The marks for every question, the answers to accept and what to award for part of an answer. 31 marks in total.

1	£40	[1 mark]
2	24 square centimetres	[1 mark]
3	2	[1 mark]
4	-1	[1 mark]
5	9 cm and 12 cm <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	[1 mark]
6	$\frac{15}{24}$	[1 mark]
7	4	[1 mark]
8	56 <i>Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.</i>	[2 marks]
9	$\frac{1}{2}$	[1 mark]
10	$\frac{1}{4}$	[1 mark]
11	£240	[1 mark]
12	188.5 cm ² <i>Award 2 marks for the correct answer. Award 1 mark for a correct method, or for the correct value before rounding or rounded incorrectly.</i>	[2 marks]
13	4	[1 mark]
14	face D <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
15	E and F <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]

16	56	[2 marks]
	<i>Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.</i>	
17	scale factor 4	[1 mark]
	<i>Award the mark when the drawing or marking matches the answer shown.</i>	
18	$3c + 15$	[2 marks]
	<i>Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.</i>	
19	$x + 6$	[2 marks]
	<i>Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.</i>	
20	56.5 cm^2	[2 marks]
	<i>Award 2 marks for the correct answer. Award 1 mark for a correct method, or for the correct value before rounding or rounded incorrectly.</i>	
21	Yes	[1 mark]
	<i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	
22	576 cm^2	[2 marks]
	<i>Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.</i>	
23	$y = -2x + 2$	[1 mark]
	<i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	
24	Yes, its cross-section is the same all the way along	[1 mark]
	<i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	

Total

31 marks