

Year 11 Foundation Maths Practice Paper 2

This paper covers: Ratio and proportion, Area and volume, Work with circles, Angles, bearings and trigonometry, Constructions and Loci, Transformations.

TIME ALLOWED

40 minutes

TOTAL MARKS

33

QUESTIONS

26

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

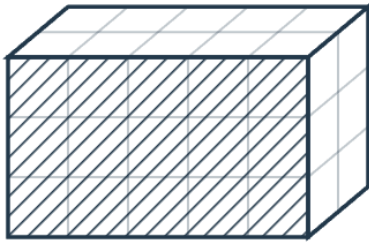
Score _____ out of 33

Percentage _____ %

01 Questions

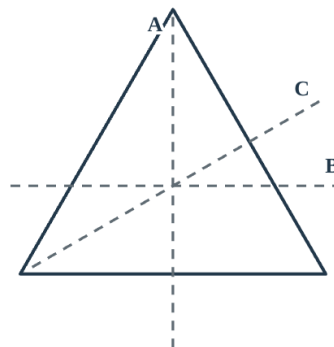
Answer every question. Show your working.

- 1** Turn this solid to see the cubes hidden behind. How many cubes are hidden from the front view? [1 mark]

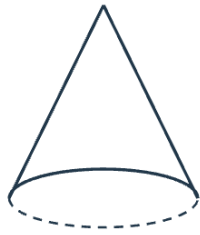


ANSWER

- 2** Three lines are drawn through the shape. Which of them are lines of symmetry? Write the letters of the lines of symmetry. [1 mark]



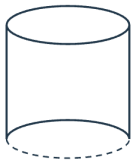
- 3** A cone has a base radius of 4 centimetres and a perpendicular height of 7 centimetres. What is its volume, to one decimal place? [1 mark]



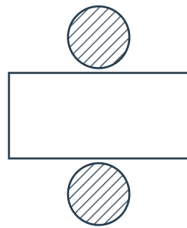
The solid

ANSWER

- 4** This cylinder has a radius of 7 centimetres and a height of 11 centimetres. What is the area of one circular end, to one decimal place? [1 mark]



The solid



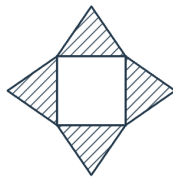
Its net

ANSWER

- 5** This square-based pyramid has a square base of side 10 centimetres and a slant height of 13 centimetres. What is the area of the square base, in square centimetres? [1 mark]



The solid



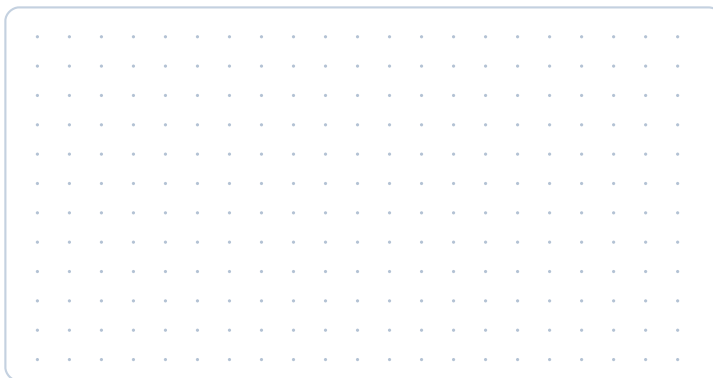
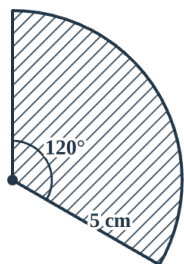
Its net

ANSWER

6

How long is the curved edge of this slice? Give your answer to one decimal place.

[1 mark]

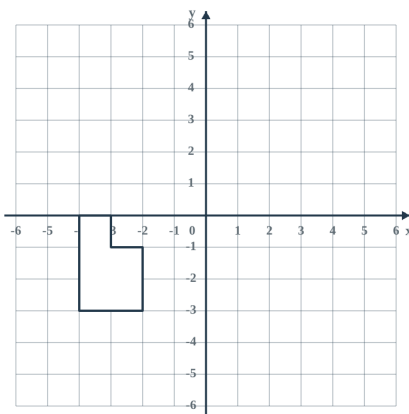


ANSWER

7

Slide the shape 3 right and 1 up. Draw the shape in its new position.

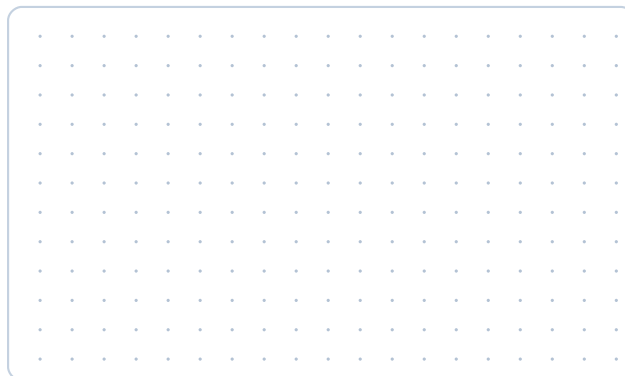
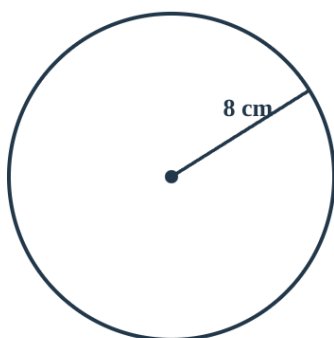
[1 mark]



8

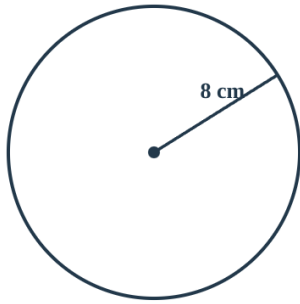
Work out the distance round this circle. Give your answer to one decimal place.

[1 mark]



ANSWER

- 9 The measurements of this sphere are given: it has a radius of 8 centimetres. What is the radius cubed, in square centimetres? [1 mark]



a sphere of this radius

ANSWER

- 10 Ben and Rosa share in the ratio 3 : 4. Cut the bar so Ben's share is on the left. Draw the line that cuts the bar. [1 mark]

3 : 4

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- 11 A sphere has a volume of 2144.7 cubic centimetres. What is the volume of a hemisphere of the same radius, to one decimal place? [2 marks]

ANSWER

- 12 A cylinder has a circular base of area 28.3 square centimetres and a volume of 424.1 cubic centimetres. What is its height, in centimetres? [1 mark]

ANSWER

- 13 What is the order of rotational symmetry of a equilateral triangle? [1 mark]

ANSWER

- 14 What bearing is due north-east? [1 mark]

ANSWER

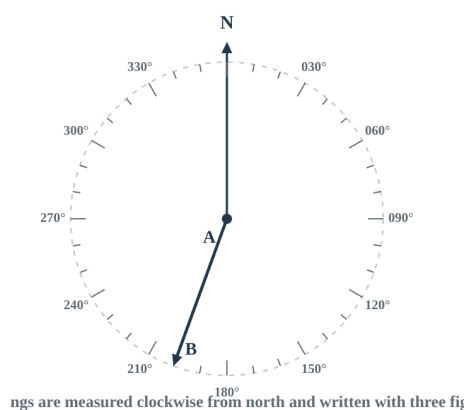
- 15 Which of these circles has an area of about 79 square centimetres? Circle the one you choose. [1 mark]

- 16 Silver and gold are mixed in the ratio 5 : 3. Cut the bar with silver on the left. Draw the line that cuts the bar. [1 mark]

5 : 3

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- 17 Read the bearing of B from A off the ring. Give three figures. [1 mark]



ANSWER

- 22** A cylinder has a volume of 1272.3 cubic centimetres and a base radius of 9 centimetres. What is its height, to the nearest centimetre? [2 marks]

ANSWER

- 23** A sphere has a surface area of 1256.6 square centimetres. What is its radius, in centimetres? [2 marks]

ANSWER

- 24** The curved part of a cone has an area of 424.1 square centimetres and its base radius is 9 centimetres. What is its slant height, in centimetres? [2 marks]

ANSWER

- 25** A cone has a volume of 46.1 cubic centimetres and a base radius of 2 centimetres. What is its height, to the nearest centimetre? [2 marks]

ANSWER

- 26** A solid of 36 cubes is drawn on isometric paper, then drawn again after being turned. Do the two drawings show the same number of cubes? Circle your answer. [1 mark]
- ☐ Yes, turning a solid does not change how many cubes it is built from
- ☐ No, the second drawing shows more faces so it needs more cubes
- ☐ No, the second drawing shows fewer because more cubes are hidden

Practice Paper 2

FOR THE MARKER

The marks for every question, the answers to accept and what to award for part of an answer. 33 marks in total.

1	15	[1 mark]
2	A and C <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
3	117.3 cm ³	[1 mark]
4	153.9 cm ²	[1 mark]
5	100 cm ²	[1 mark]
6	10.5 cm	[1 mark]
7	3 right and 1 up <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
8	50.3 cm	[1 mark]
9	512 cm ²	[1 mark]
10	3 of the 7 shares <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
11	1072.3 cm ³ <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]
12	15 cm	[1 mark]
13	3	[1 mark]
14	45	[1 mark]
15	the first one <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
16	5 of the 8 shares <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]

17	200	[1 mark]
18	an arc from A of radius 7, an arc from B of radius 5 <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
19	200 square millimetres <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]
20	4000 cubic centimetres <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]
21	cone $\rightarrow \pi \times \text{radius} \times \text{slant height}$ for the curved part, plus the base circle; cuboid $\rightarrow$ the six rectangular faces added, in three matching pairs; square-based pyramid $\rightarrow$ the square base added to the four triangular faces <i>Award the mark only when every part is correct.</i>	[1 mark]
22	5 cm <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]
23	10 cm <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]
24	15 cm <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]
25	11 cm <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]
26	Yes, turning a solid does not change how many cubes it is built from <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	[1 mark]

Total

33 marks