

Year 11 Foundation Maths Practice Paper 1

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

TIME ALLOWED

45 minutes

TOTAL MARKS

37

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 37

Percentage _____ %

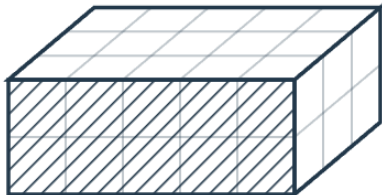
01 Questions

Answer every question. Show your working.

- 1

This solid is drawn from centimetre cubes. How many cubes are there altogether?

[1 mark]

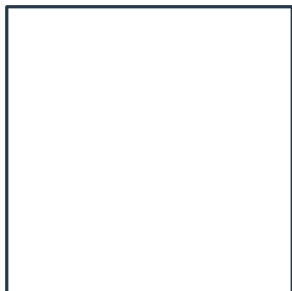


ANSWER

- 2

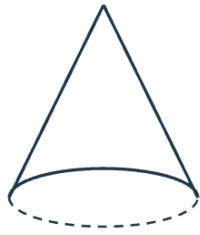
How many lines of symmetry does this shape have?

[1 mark]

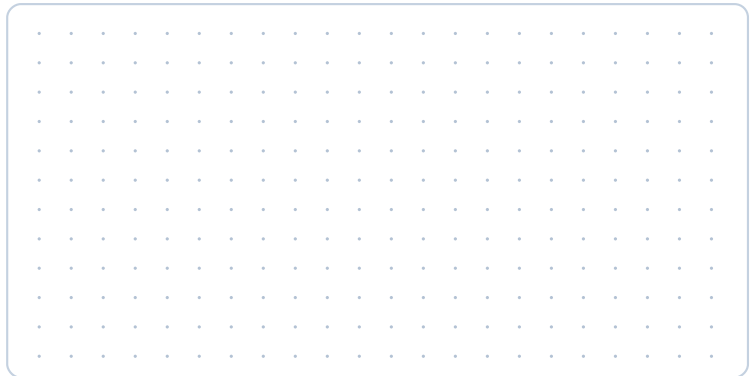


ANSWER

- 3 The measurements of this cone are given: it has a base radius of 4 centimetres and a perpendicular height of 13 centimetres. What is the area of the circular base, to one decimal place? [1 mark]

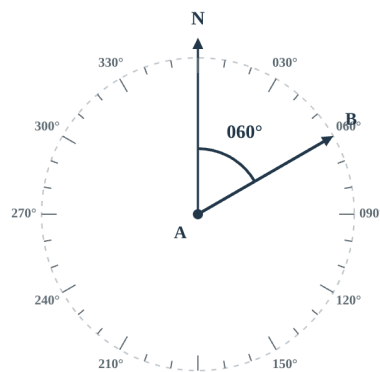


The solid



ANSWER

- 4 The bearing of B from A is marked. Which way is it measured from the north line? Circle your answer. [1 mark]
- ☐ Clockwise ☐ Either way ☐ Anticlockwise



Bearings are measured clockwise from north and written with three figures.

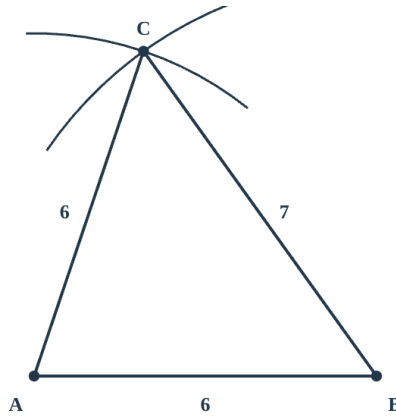
5 The triangle has sides 6, 6 and 7. Which side is 6 long? Circle your answer.

[1 mark]

☐ AC

☐ BC

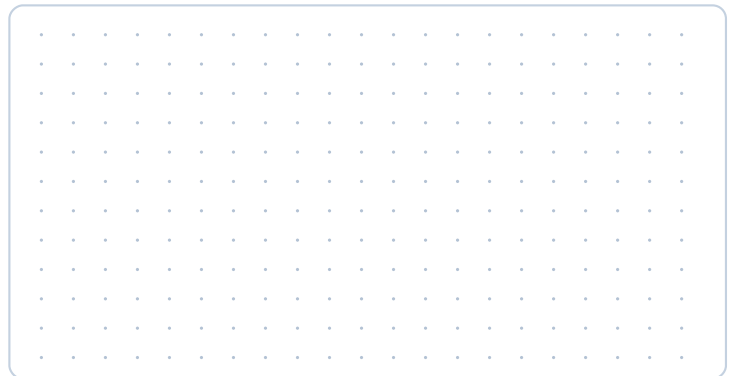
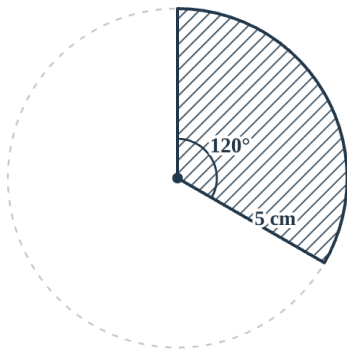
☐ AB



Each arc shows every point at the right distance from a corner.

6 The slice is drawn on its whole circle. What fraction of the circle is it? Give the fraction in its simplest form. Write your answer as a fraction.

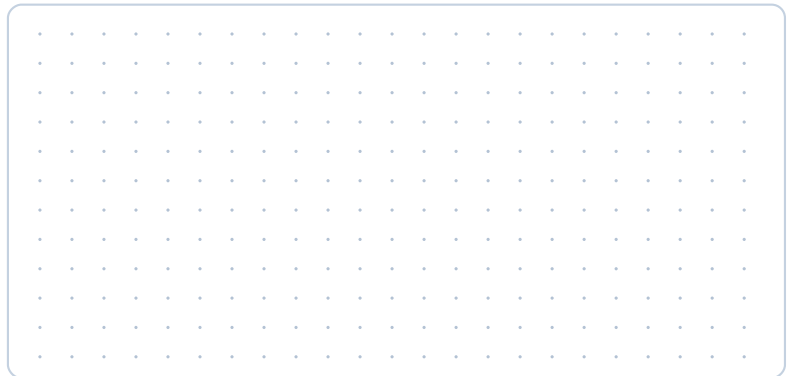
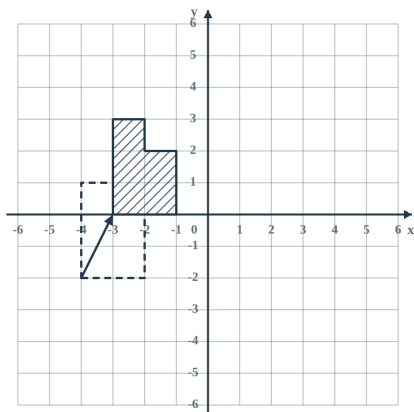
[1 mark]



ANSWER

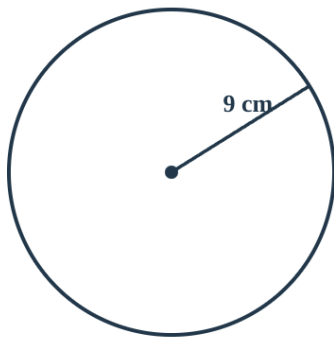
7 The shape has slid to its new position. How many squares to the right has it moved?

[1 mark]



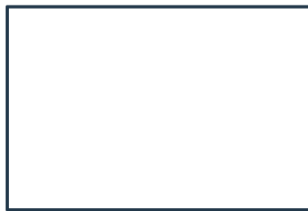
ANSWER

8 The radius of this circle is marked. How long is its diameter, in centimetres? [1 mark]

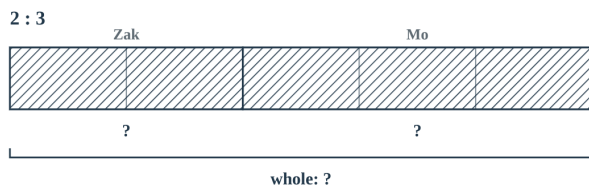


ANSWER

9 Place a line of symmetry through the centre of this shape. Draw one line of symmetry on the shape. [1 mark]



10 Zak and Mo share 10 sweets in the ratio 2 : 3. The bar shows the shares. How many equal parts is it cut into? [1 mark]

[illegible]

ANSWER

Page 10

- 11** A circle has a diameter of 6 centimetres. What is its circumference to one decimal place? [2 marks]

ANSWER

- 12** Work out the volume of a sphere that has a radius of 5 centimetres. Give your answer to one decimal place. [2 marks]

ANSWER

- 13** A cylinder has a radius of 2 centimetres and a height of 11 centimetres. What is its surface area, to one decimal place? [2 marks]

ANSWER

- 14** A square-based pyramid has a square base of side 6 centimetres and a slant height of 5 centimetres. What is its surface area in square centimetres? [1 mark]

ANSWER

15 $6,000 \text{ cm}^2 = ? \text{ m}^2$. What number goes in the box? [1 mark]

ANSWER

16 $200 \text{ cm}^3 = ? \text{ litres}$. What number goes in the box? [1 mark]

ANSWER

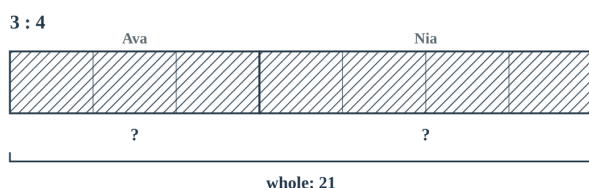
17 Work out the volume of a cylinder that has a radius of 4 centimetres and a height of 4 centimetres. Give your answer to one decimal place. [2 marks]

ANSWER

18 A sphere has a radius of 8 centimetres. What is its surface area, to one decimal place? [2 marks]

ANSWER

19 Ava and Nia share 21 in the ratio 3 : 4. How much does Ava get? [2 marks]

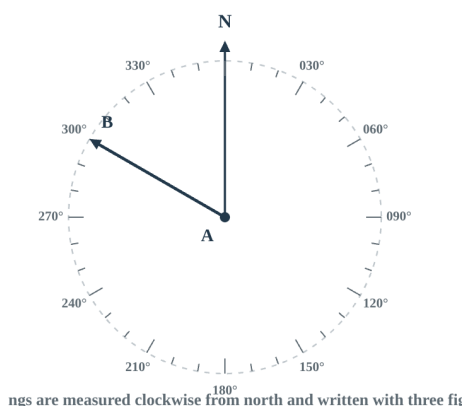


ANSWER

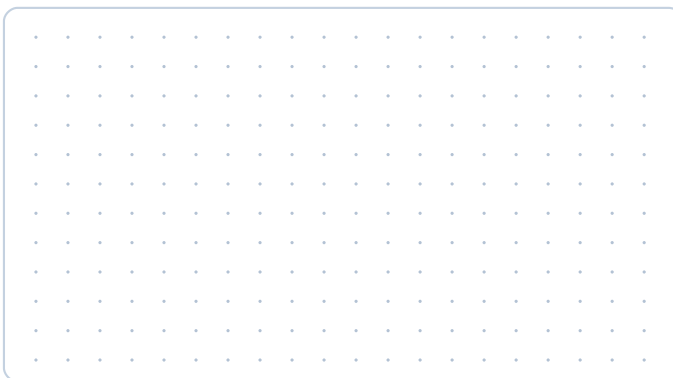
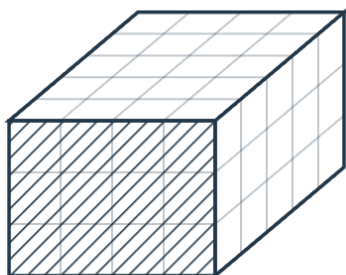
20 Match each solid to the rule that gives its volume. Draw a line from each item on the left to its match on the right. [1 mark]

- | | | |
|----------------------|---|---|
| square-based pyramid | • | • the area of the base $\times$ the height $\div 3$ |
| sphere | • | • $\frac{4}{3} \times \pi \times \text{radius}^3$ |
| triangular prism | • | • the area of the cross-section $\times$ the length |

21 Turn the ray from A to a bearing of 300° . Draw the bearing from the start with a protractor. [1 mark]



22 This solid has been turned a quarter turn round. How many cubes are there in one layer? [2 marks]



ANSWER

- 23** One cylinder has a volume of 1696.5 cubic centimetres. A second cylinder has every length twice as big. What is its volume, to one decimal place? [2 marks]

ANSWER

- 24** One sphere has a surface area of 1809.6 square centimetres. A second sphere has every length twice as big. What is its surface area, to one decimal place? [2 marks]

ANSWER

- 25** One cone has a surface area of 282.7 square centimetres. A second cone has every length twice as big. What is its surface area, to one decimal place? [2 marks]

ANSWER

- 26** One cone has a volume of 153.9 cubic centimetres. A second cone has every length twice as big. What is its volume, to one decimal place? [2 marks]

ANSWER

Practice Paper 1

FOR THE MARKER

The marks for every question, the answers to accept and what to award for part of an answer. 37 marks in total.

1	30	[1 mark]
2	4	[1 mark]
3	50.3 cm ²	[1 mark]
4	Clockwise <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	[1 mark]
5	AC <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	[1 mark]
6	$\frac{1}{3}$	[1 mark]
7	1	[1 mark]
8	18 cm	[1 mark]
9	one of the 2 lines of symmetry <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
10	5	[1 mark]
11	18.8 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]
12	523.6 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]
13	163.4 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]
14	96 cm ²	[1 mark]
15	0.6 square metres	[1 mark]

16	0.2 litres	[1 mark]
17	201.1 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]
18	804.2 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]
19	9 <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	square-based pyramid → the area of the base × the height ÷ 3; sphere → $4 \div 3 \times \pi \times \text{radius}^3$; triangular prism → the area of the cross-section × the length <i>Award the mark only when every part is correct.</i>	[1 mark]
21	300° <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
22	20 <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]
23	13571.7 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]
24	7238.2 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]
25	1131.0 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]
26	1231.5 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]

Total

37 marks