

Year 11 Foundation Maths Practice Paper 3

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

35

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

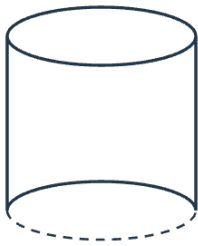
Score _____ out of 35

Percentage _____ %

01 Questions

Answer every question. Show your working.

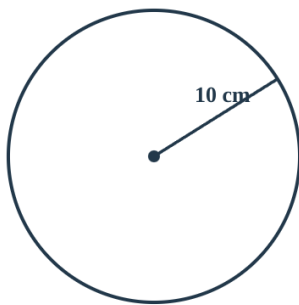
- 1** The measurements of this cylinder are given: it has a radius of 8 centimetres and a height of 3 centimetres. What is the area of the circular cross-section, to one decimal place? [1 mark]



The solid

ANSWER

- 2 A sphere has a radius of 10 centimetres. What is its volume, to one decimal place? [1 mark]

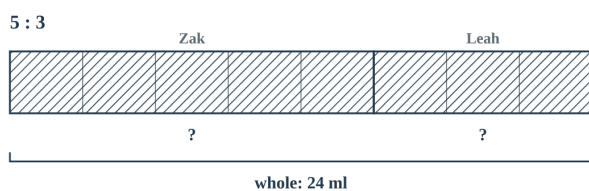


a sphere of this radius

ANSWER

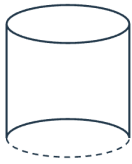
Page 10

- 3** The whole bar is 24 ml. What is one part worth? [1 mark]

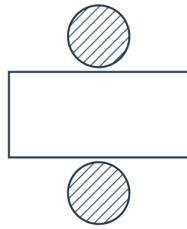
[illegible]

ANSWER

- 4 Work out the surface area of this cylinder, which has a radius of 10 centimetres and a height of 6 centimetres. Give your answer to one decimal place. [1 mark]



The solid



Its net

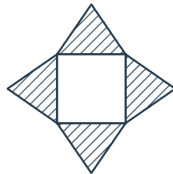
123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

ANSWER

- 5 Work out the surface area of this square-based pyramid, which has a square base of side 24 centimetres and a slant height of 20 centimetres. Give your answer in square centimetres. [1 mark]



The solid

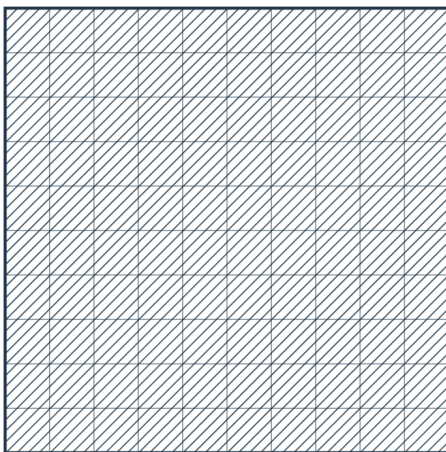


Its net

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ANSWER

- 6 The square is 1 cm by 1 cm, drawn on millimetre squares. How many square millimetres does it cover? [1 mark]



123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

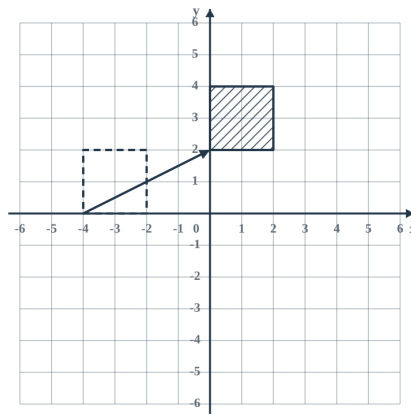
ANSWER

7 The shape has moved. Which description fits the slide? Circle your answer. [1 mark]

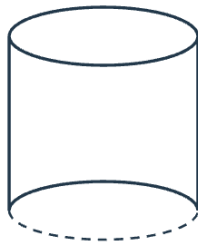
☐ 2 right and 4 up

☐ 5 right and 2 up

☐ 4 right and 2 up



8 A cylinder has a radius of 4 centimetres and a height of 7 centimetres. What is its volume, to one decimal place? [1 mark]



The solid

ANSWER

9 This sphere has a radius of 12 centimetres. What is the area of the circle through its centre, to one decimal place? [1 mark]



a sphere of this radius

ANSWER

- 10 The distance round a circle is 62.8 centimetres. What is its diameter, to the nearest centimetre? [1 mark]

ANSWER

- 11 Work out the volume of a cone that has a base radius of 6 centimetres and a perpendicular height of 15 centimetres. Give your answer to one decimal place. [2 marks]

ANSWER

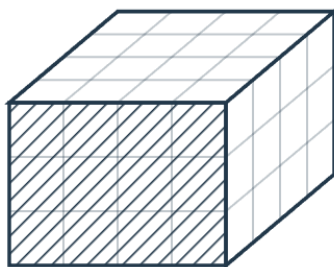
- 12 A triangle has $AB = 8$ cm, $AC = 6$ cm and $BC = 5$ cm. After drawing AB , what radius is the arc from B, in centimetres? [1 mark]

ANSWER

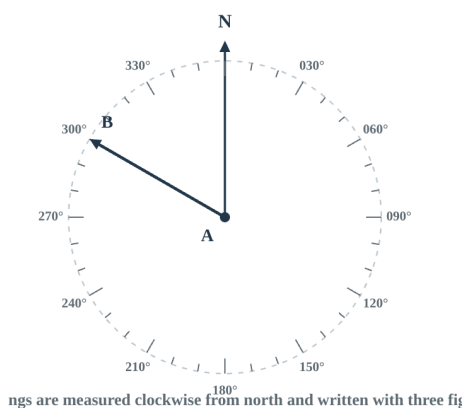
- 13 A cone and a cylinder have the same base and the same height. The cylinder has a volume of 141.4 cubic centimetres. What is the volume of the cone, to one decimal place? [2 marks]

ANSWER

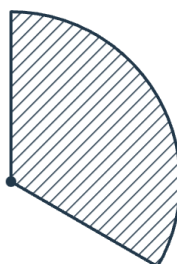
- 14 Set the slider to the number of cubes along the front edge of this solid. Write the number of cubes along the front edge. [1 mark]



- 15 A ship sails on a bearing of 300° from A. Turn the ray to show its course. Draw the bearing from the start with a protractor. [1 mark]



- 16 Set the slice so that it is a third of the circle. Draw the angle with a ruler and protractor. [1 mark]

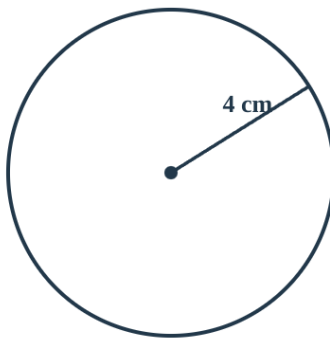


- 17 This shape has 2 lines of symmetry. Place one that is not straight up. Draw all the lines of symmetry on the shape. [1 mark]



- 18 Cara says 6 litres is 60 cm^3 because there are 10 cm in a litres. What is 6 litres in cubic centimetres? Circle your answer. [1 mark]
- ☐ 6,000 ☐ 60 ☐ 600

- 19 Rosa squared the diameter and said the area of this circle is 201.1 square centimetres. What is the area, to one decimal place? Circle your answer. [1 mark]
- ☐ 25.1 ☐ 50.3 ☐ 201.1



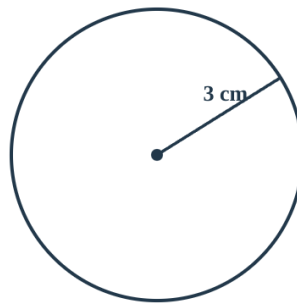
- 20 Grace says the volume of this sphere is 37.7 cubic centimetres. It has a radius of 3 centimetres. What is the volume really? Circle your answer.

[1 mark]

☐ 226.2

☐ 37.7

☐ 113.1



a sphere of this radius

- 21 Two friends share 16 stickers in the ratio 1 : 3. Ben says each gets 8 because there are two friends. What is wrong? Circle your answer.

[1 mark]

☐ The ratio makes 4 parts, not 2, so one part is 4

☐ They should get 1 and 3

☐ Nothing, halves are right

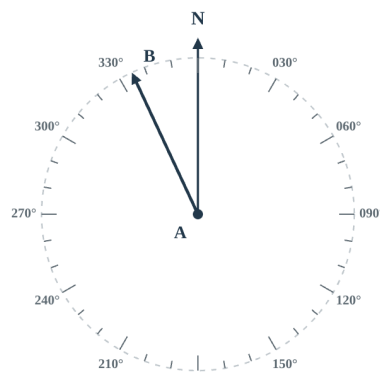
- 22 Jay measures 25° from north to the ray and writes the bearing as 025° . What is wrong? Circle your answer.

[1 mark]

☐ He should add 180

☐ Nothing, that is right

☐ He measured anticlockwise; clockwise it is 335°



Angles are measured clockwise from north and written with three figures

- 23** Leah paints the whole outside of a sphere that has a radius of 12 centimetres. One pot of paint covers 60 square centimetres. How many whole pots are needed? [3 marks]

ANSWER

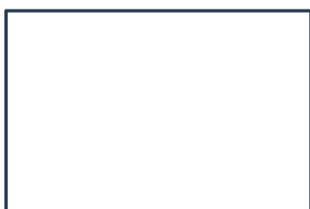
- 24** Ben paints the whole outside of a cone that has a base radius of 3 centimetres and a slant height of 5 centimetres. One pot of paint covers 60 square centimetres. How many whole pots are needed? [3 marks]

ANSWER

- 25** Cara has 25 cubes and builds a solid 2 cubes by 3 cubes by 3 cubes. How many cubes are left over? [3 marks]

ANSWER

- 26** What is the order of rotational symmetry of this shape? [2 marks]



ANSWER

Practice Paper 3

FOR THE MARKER

The marks for every question, the answers to accept and what to award for part of an answer. 35 marks in total.

1	201.1 cm ²	[1 mark]	2	4188.8 cm ³	[1 mark]
3	3 ml	[1 mark]	4	1005.3 cm ²	[1 mark]
5	1536 cm ²	[1 mark]	6	100 square millimetres	[1 mark]
7	4 right and 2 up <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	[1 mark]	8	351.9 cm ³	[1 mark]
9	452.4 cm ²	[1 mark]	10	20 cm	[1 mark]
11	565.5 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]	12	5 centimetres	[1 mark]
13	47.1 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]	14	4 <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
15	300° <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]	16	120° <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]
17	the one line of symmetry <i>Award the mark when the drawing or marking matches the answer shown.</i>	[1 mark]	18	6,000 <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	[1 mark]
19	50.3 <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	[1 mark]	20	113.1 <i>Award the mark for the correct choice only. Two or more choices marked scores no mark.</i>	[1 mark]

21	The ratio makes 4 parts, not 2, so one part is 4	[1 mark]	22	He measured anticlockwise; clockwise it is 335°	[1 mark]
	Award the mark for the correct choice only. Two or more choices marked scores no mark.			Award the mark for the correct choice only. Two or more choices marked scores no mark.	
23	31	[3 marks]	24	2	[3 marks]
	Award 3 marks for the correct answer. Award 2 marks for a complete method with no more than one arithmetic error. Award 1 mark for a correct first step.			Award 3 marks for the correct answer. Award 2 marks for a complete method with no more than one arithmetic error. Award 1 mark for a correct first step.	
25	7	[3 marks]	26	2	[2 marks]
	Award 3 marks for the correct answer. Award 2 marks for a complete method with no more than one arithmetic error. Award 1 mark for a correct first step.			Award 2 marks for the correct answer. Award 1 mark for a correct method with no more than one arithmetic error.	

Total	35 marks
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