8.1 Reasoning: Measurement and Geometry: 30-minute Pack

STA KS2 National Curriculum Mathematics - STA Reasoning Test Framework · Calculators not allowed · about 30 minutes

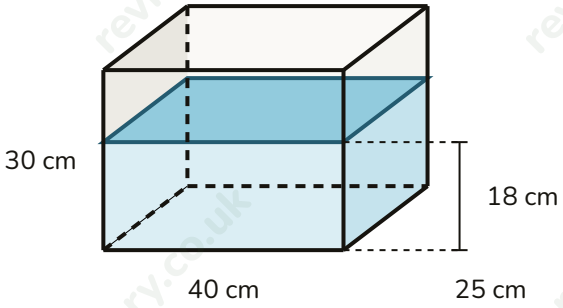
Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 An open-top fish tank in the shape of a cuboid is 40cm long, 25cm wide and 30cm high. Water is poured into the tank until it is 18cm deep.

Diagram NOT accurately drawn



(a) Calculate the volume of water in the tank, in cm^3. **(2)**

.....

(b) 1000 cm^3 = 1 litre. Calculate the volume of water in litres. **(1)**

.....

(c) A further 6 litres of water is poured into the tank. Calculate the new depth of the water, in cm. **(3)**

.....

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2 A designer is making a scale model of a rectangular school hall. The real hall measures 24m by 15m. The model is made using a scale of 1 : 60.

(a) Calculate the length and width of the model, in cm. **(2)**

.....

(b) Calculate the perimeter of the model, in cm. **(2)**

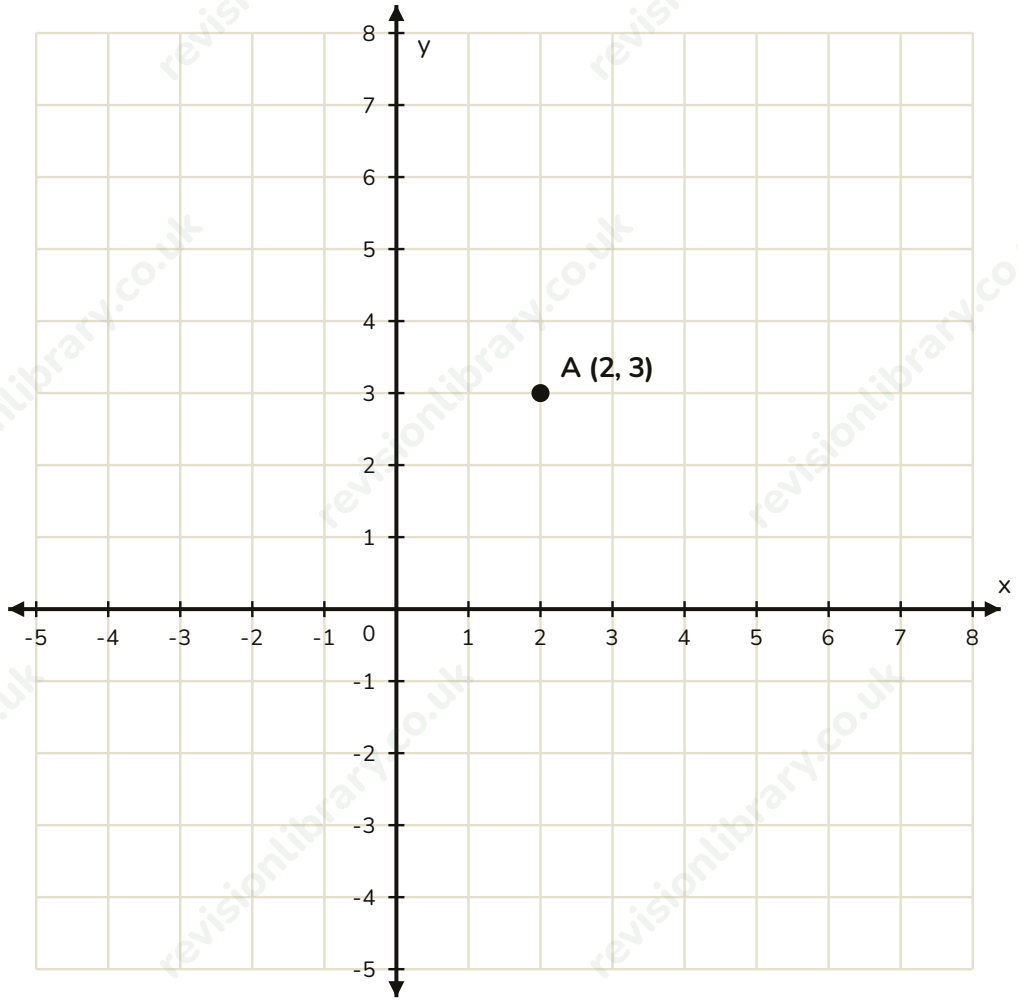
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(c) A ribbon is glued around the edge of the model hall's base, with 5cm extra needed for overlap at the joins. Calculate the total length of ribbon required, in cm. **(1)**

.....

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3 Point A is at (2, 3). Point A is translated 4 units right and 5 units down to point B. Write the coordinates of point B.



(2)

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4 A rectangle measures 12 cm by 5 cm. A smaller rectangle 2 cm by 3 cm is cut out of one corner.

What is the area of the shape that is left, in square centimetres?

Answer: ___

(3)

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5 A lesson starts at 12:20 and takes 3 hours 0 minutes.

What time does it finish? Write your answer as a 24-hour clock time.

Answer: ___

(2)

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6 Which is bigger, 4.1 litres or 4,061 ml?

Answer: ___

(2)

---

7 Use 1 pint = 570 ml.

A jug holds 3 pints of water. How much is that in ml?

Answer: ___ ml

(2)

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8 Convert 41.9 kg to g.

Answer: ___ g

(1)

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9 Point P is at (-3, -4). It moves 4 units right and 4 units up.

What are the coordinates of the new point?

Answer: (___, ___)

(2)

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10 How many lines of symmetry does a regular hexagon have?

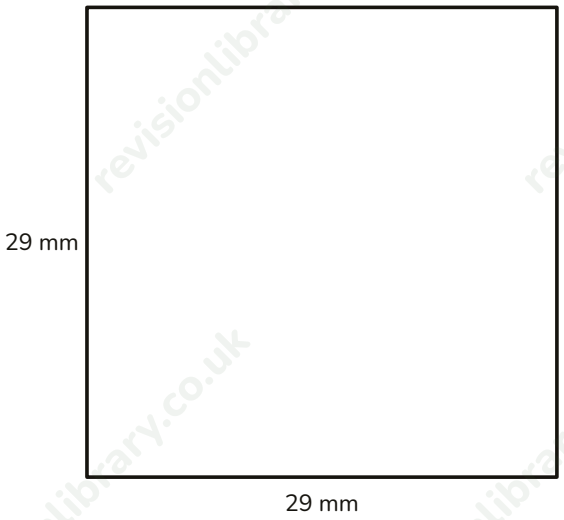
(1)

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11 A square has sides of length 29 mm.

What is its perimeter?

Answer: ___ mm



(1)

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Mark scheme · 8.1 Reasoning: Measurement and Geometry: 30-minute Pack

Question 1

(a) 40 x 25 x 18 oe	M1
(a) 18000 cm^3 cao	A1
(a) Answer: **18000 cm^3**	
(b) 18 litres ft cao	B1
(b) Answer: **18 litres**	
(c) new volume = 18000 + 6000 = 24000 cm^3 ft	M1
(c) divides by base area, 40 x 25 = 1000	M1
(c) 24cm cao	A1
(c) Answer: **24cm**	

Question 2

(a) converts to cm and divides by 60, e.g. 2400/60 and 1500/60	M1
(a) 40cm and 25cm cao (both required)	A1
(a) Answer: **Length = 40cm, width = 25cm**	
(b) (40+25) x 2 ft	M1
(b) 130cm cao	A1
(b) Answer: **130cm**	
(c) 135cm ft cao	B1
(c) Answer: **135cm**	

Question 3

2+4 and 3-5 oe	M1
(6, -2) cao	A1
Answer: **(6, -2)**	

Question 4

finds both areas	M1
subtracts	M1
54 square centimetres cao	A1
Answer: **54 square centimetres**	

Question 5

adds hours then minutes	M1
15:20 cao	A1
Answer: **15:20**	

Question 6

converts to the same unit	M1
4.1 litres cao	A1
Answer: **4.1 litres**	

Question 7

multiplies by the conversion	M1
1,710 ml cao	A1
Answer: **1,710 ml**	

Question 8

41,900 g cao	B1
Answer: **41,900 g**	

Question 9

one coordinate correct	M1
(1, 0) cao	A1
Answer: **(1, 0)**	

Question 10

6 cao	B1
Answer: **6**	

Question 11

116 mm cao	B1
Answer: **116 mm**	

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