

ISEB Assessments

Year 8 Level 1 Maths Test 1

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This test contains a selected set of 10 questions in a particular topic order.

- 100 marks are available in total.
- You should take no more than 1 hour to complete the test.
- Write your answers in the spaces provided.
- Always write down your working, except when you are told not to.
- Calculators are not allowed.

NOTE TO TEACHERS

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1. (a) Here is a list of numbers.

4 5 8 16 19 27 30 32

Without using any number more than once, choose from these numbers:

(i) a prime number

Answer: (1)

(ii) the square root of 16

Answer: (1)

(iii) a factor of 15

Answer: (1)

(iv) a multiple of 4

Answer: (1)

(v) a square number

Answer: (1)

(vi) a cube number.

Answer: (1)

- (b) (i) Write the following numbers in order of size, starting with the smallest:

2.33 2 2.3 2.03 2.003

Answer: (3)

- (ii) What is the difference between the largest and smallest of the numbers in part (b) (i)?

Answer: (1)

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2. (a) Find 20% of £8.50

Answer: £ (2)

(b) (i) Find $\frac{2}{3}$ of 3.81 metres.

Answer: m (2)

(ii) Express your answer to part (b) (i) in centimetres.

Answer: cm (1)

(c) Express 95% as a fraction in its lowest terms.

Answer: (2)

(d) (i) Evaluate, giving your answer in millimetres,

$$345 \text{ mm} + 35.8 \text{ cm}$$

Answer: mm (2)

(ii) Give your answer to part (b) (i) in metres.

Answer: m (1)

3. Evaluate:

(a) $13.17 + 8.68$

Answer: (2)

(b) $13.17 - 8.68$

Answer: (2)

(c) 37.8×6

Answer: (2)

(d) $37.8 \div 6$

Answer: (2)

(e) $13.5 + 29 - 43$

Answer: (2)

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4. (a) Susie has three lengths of uncooked spaghetti: 23 cm, 19 cm and 27 cm.
How much longer than the shortest is the longest?

Answer: cm (2)

- (b) Four small pebbles have masses of 8.9 g, 9.8 g, 7.3 g and 6.8 g.
What is their total mass?

Answer: g (2)

- (c) Elaine's height on her last birthday was 1.59 m.
Her height has increased by 7 cm.
What is her height now?

Answer: m (2)

(d) There were 637 sweets in a jar.

Sarah guessed that the jar held 546 sweets.

Eli thought that the jar held 735 sweets.

(i) How far out was Sarah's guess?

Answer: sweets (2)

(ii) Whose guess was closest to the correct number of sweets in the jar?

Answer: (2)

5. Using the number 5 three times, we can make many number sentences.

For example:

$$5 + 5 - 5 = 5$$

$$5 \times 5 + 5 = 30$$

$$5 \times (5 + 5) = 50$$

$$(5 \div 5) + 5 = 6$$

$$5 - (5 \div 5) = 4$$

Using the number 6 three times, make up at least six number sentences with different answers.

Do not spend too much time on this question. Ten number sentences would be more than sufficient! (10)

Answer:

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6. (a) Sandra has six identical parcels to wrap.

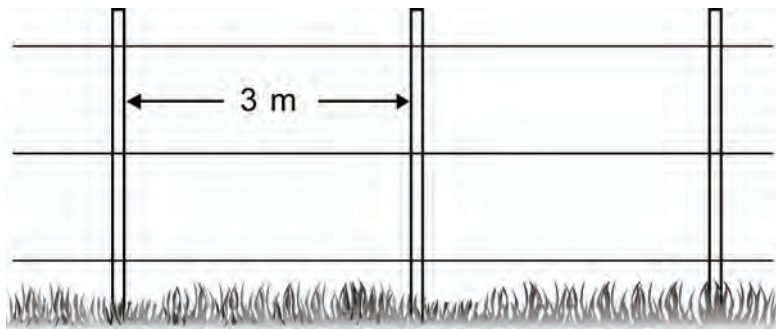
Each parcel needs 75 centimetres of tape.

How much tape, in total, does Sandra need to wrap all the packages?
Give your answer in metres.

Answer: m (3)

(b) Twenty fence posts are placed along the perimeter of a rectangular garden.

The posts are three metres apart and there is a post at each corner.



The length of the rectangle is 21 metres.

Ignore the width of each post.

(i) How many posts are there on each of the two longest sides?

Answer: posts (1)

(ii) Write down the width of the rectangle.

Answer: m (2)

(iii) What is the perimeter of the garden?

Answer: m (2)

(iv) What is area of the garden?

Answer: m² (2)

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7. (a) Simplify:

(i) $4a + 4a$

Answer: (1)

(ii) $4a \times 4a$

Answer: (2)

(iii) $(4a)^2$

Answer: (2)

(iv) $4a \div 4a$

Answer: (1)

(b) When $a = 2$ and $b = -3$, find the value of:

(i) ab

Answer: (1)

(ii) $a - b$

Answer: (1)

(iii) $a^2 + b$

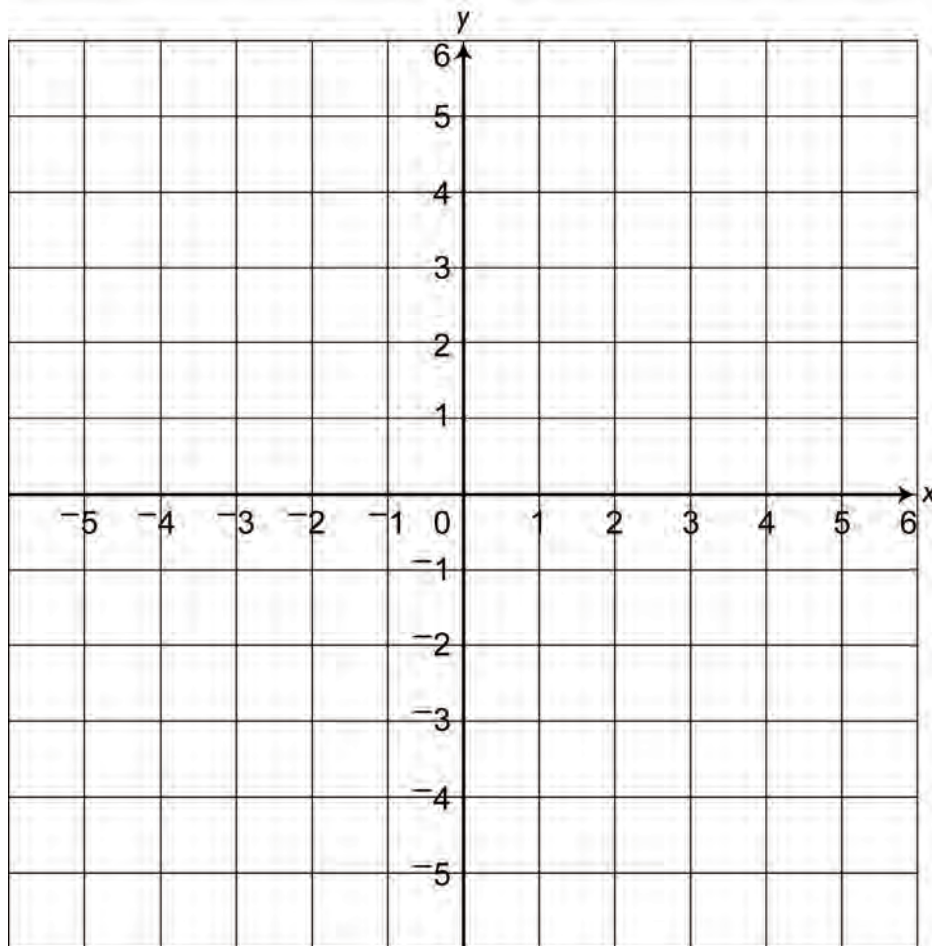
Answer: (2)

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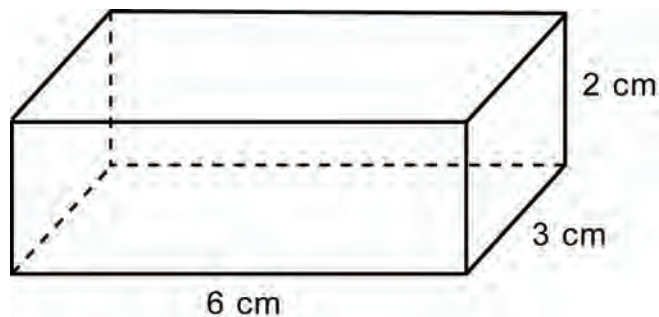
8. (a) On the co-ordinate grid below:

(i) plot and label the point $A(-1,4)$ (1)

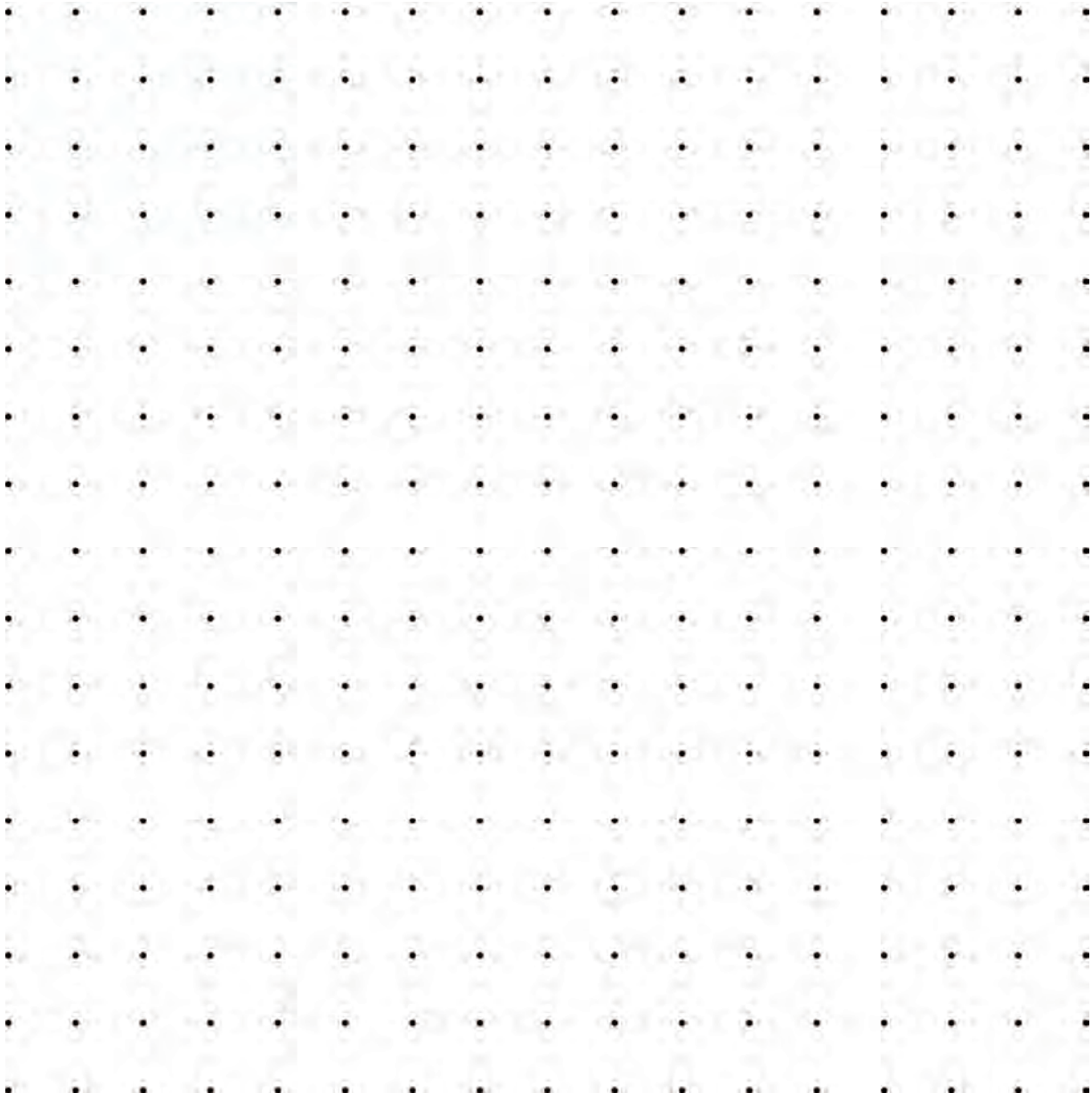
(ii) draw and label the line $y = -3$ (1)



(b) A cuboid measures 6 cm by 3 cm by 2 cm.



(i) Draw an accurate net of the cuboid on the centimetre square dotted grid opposite. (3)



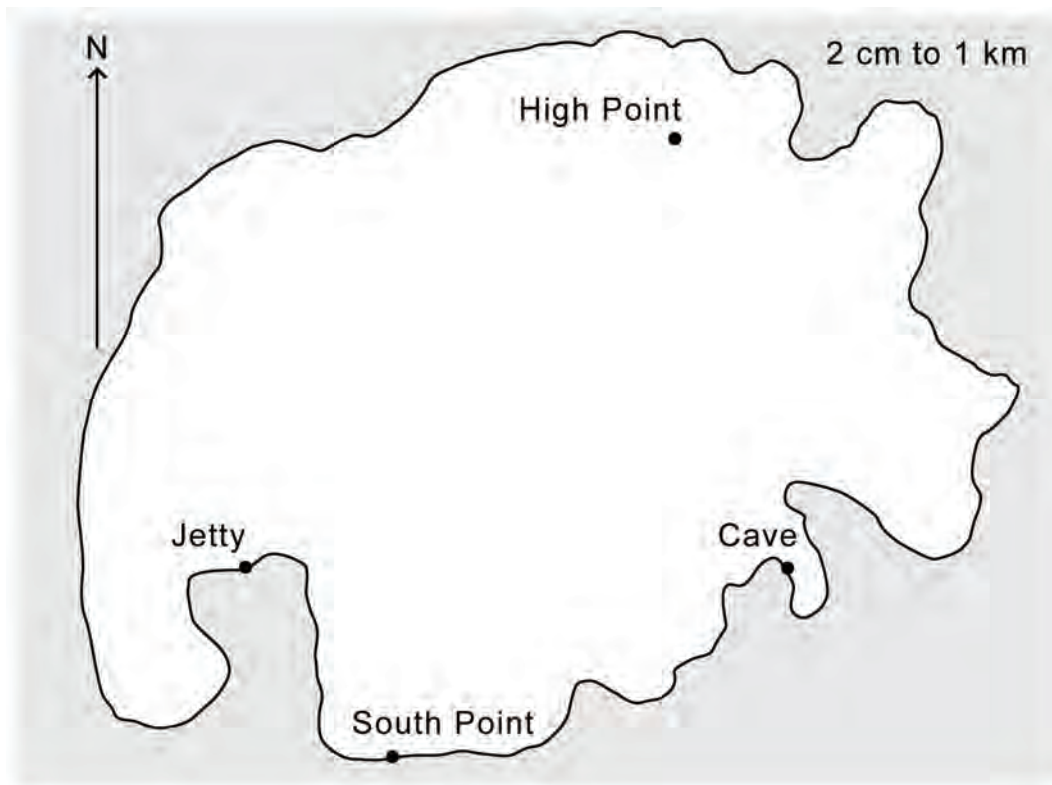
(ii) Calculate the area of the net.

Answer: cm² (3)

(iii) Calculate the volume of the solid.

Answer: cm³ (2)

9. Here is a scale drawing of an island.



- (i) (a) What is the distance on the map, in centimetres, between the Jetty and High Point?

Answer: cm (1)

- (b) What distance on the island does this represent?

Answer: km (1)

- (ii) (a) What is the compass direction of High Point from the Jetty?

Answer: (2)

- (b) What is the compass direction of the Jetty from the Cave?

Answer: (2)

Lumpa Rock lies in the sea 2 km from the Cave and 4.2 km from South Point.

- (iii) Mark with a cross the position of Lumpa Rock on the map. Label it with the letter *L*. (2)

- (iv) Estimate the length of the coastline of the island.

Answer: km (2)

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10. (a) The list shows the quiz scores of 20 pupils.

7	7	9	10	6	7	8	6	5	6
6	7	6	4	8	8	7	5	9	6

(i) Complete the table of values. (3)

score	tally	frequency
4		
5		
6		
7		
8		
9		
10		
total		20

(ii) Use the data in part (i) to find:

(a) the modal score

Answer: (1)

(b) the median score

Answer: (2)

- (b) Simon rolls two tetrahedral dice, one blue and one yellow, each with faces numbered 1, 2, 3 and 4



He adds the scores together.

- (i) Complete the table below to show all possible total scores. (2)

		score on yellow die			
		1	2	3	4
score on blue die	1		3		
	2				6
	3	4			
	4				

- (ii) What is the probability that Simon's total is 5?

Answer: (1)

- (iii) What is the probability that Simon's total score is 4 or less?

Answer: (1)