

ISEB Assessments Year 6 Maths Test 3

Author: ISEB



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.

SAMPLE

NOTE TO TEACHERS

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Year 6 Maths Test 3

1. (a) (i) Bill cuts 48 cm from a pipe which is 12.2 metres long.
How long is the remaining pipe?

Answer: m (2)

- (ii) He cuts the remaining pipe into four equal lengths.
How long is each piece?

Answer: m (2)

- (b) Here is a list of numbers.

6 8 11 15 16

Choose from these numbers:

- (i) a prime number

Answer: (1)

- (ii) a square number

Answer: (1)

- (iii) the product of 3 and 5

Answer: (1)

- (iv) the cube of 2

Answer: (1)

(c) Write the next number in each sequence.

(i) 2 4 8 16 (1)

(ii) 1 4 7 10 13 (1)

Turn over to the next page for question 2

SAMPLE

Year 6 Maths Test 3

2. (a) The figures below give the temperature (in degrees Celsius) in eight different cities in the world one day last year.

city	°C
Amsterdam	7
Athens	14
Cape Town	29
Los Angeles	16
Madrid	10
Moscow	-3
Stockholm	-2
Tokyo	17

- (i) Which was the coldest place?

Answer: (1)

- (ii) What was the range of temperatures?

Answer: °C (2)

- (iii) What was the mean temperature?

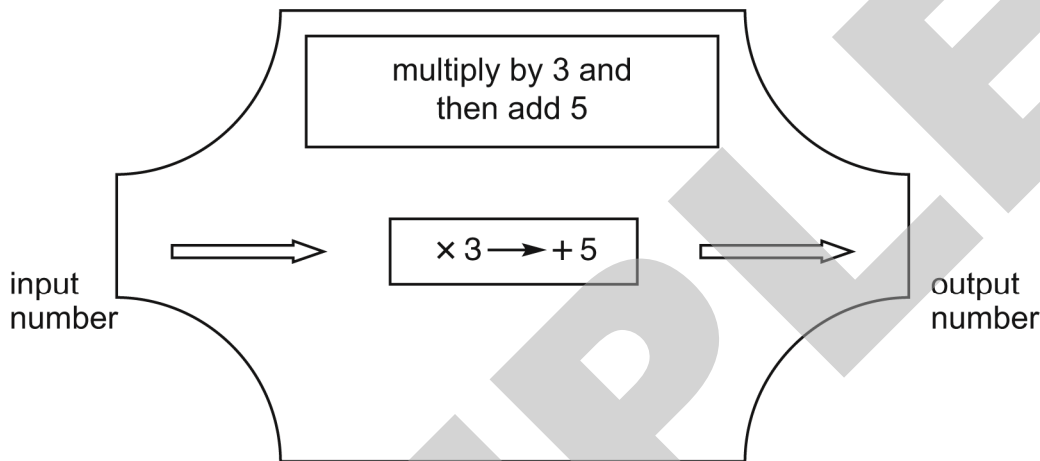
Answer: °C (4)

(b) Write the following in order of size, starting with the smallest.

0.4 $\frac{3}{10}$ $\frac{1}{3}$ 38%

Answer: (3)

3. (a) (i) The number machine below changes numbers according to the rule **multiply by 3 and then add 5**



Write the missing **input** and **output** numbers for the machine.

Input	→ $\times 3 + 5$ →	Output	
5	→ → → → →	20	
4	→ → → → →	(1)
11	→ → → → →	(1)
.....	→ → → → →	8	(1)

(ii) I think of a number, halve it and then subtract 1

The result is 5

Which number am I thinking of?

Answer: (2)

Turn over to the next page for question 3 (b)

Year 6 Maths Test 3

(b) (i) Divide 1260 by 24

Answer: (3)

(ii) Curtain hooks are sold in packets of 24.

A curtain maker needs a total of 1256 hooks.

How many packets will he need?

Answer: packets (2)

SAMPLE

4. (a) In a concert hall, there are 39 rows of seats with 48 seats in each row.

(i) Estimate the total number of seats.

Your must show your method clearly.

Answer: seats (3)

(ii) Calculate the exact number of seats in the hall.

Answer: seats (3)

(b) Calculate:

(i) $\frac{3}{8}$ of 48 km

Answer: km (2)

(ii) 0.35 of 20 kg

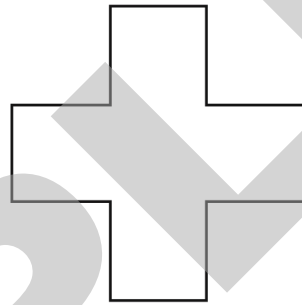
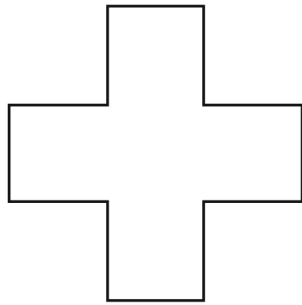
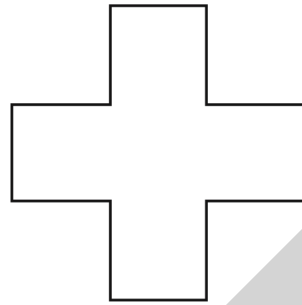
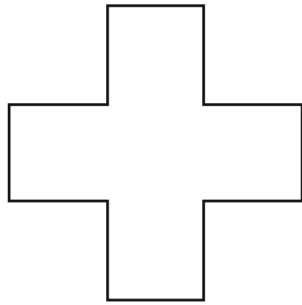
Answer: kg (2)

Year 6 Maths Test 3

5. (a) The crosses below can be divided into four identical pieces in different ways.

Show as many different ways as you can.

(4)

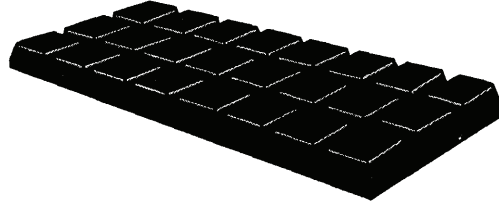


SAMPLE

(b) *Choice Chocs* is planning to launch a new chocolate bar.

The bar must be rectangular and must contain 24 square pieces of equal size.

One possible arrangement for the bar has 3 rows of 8 pieces.



(i) Find 3 more possible arrangements.

(Note: 8 by 3 is the same as 3 by 8)

Answer: by

..... by

..... by (3)

(ii) *Choice Chocs* decides to choose the arrangement with the smallest possible perimeter.

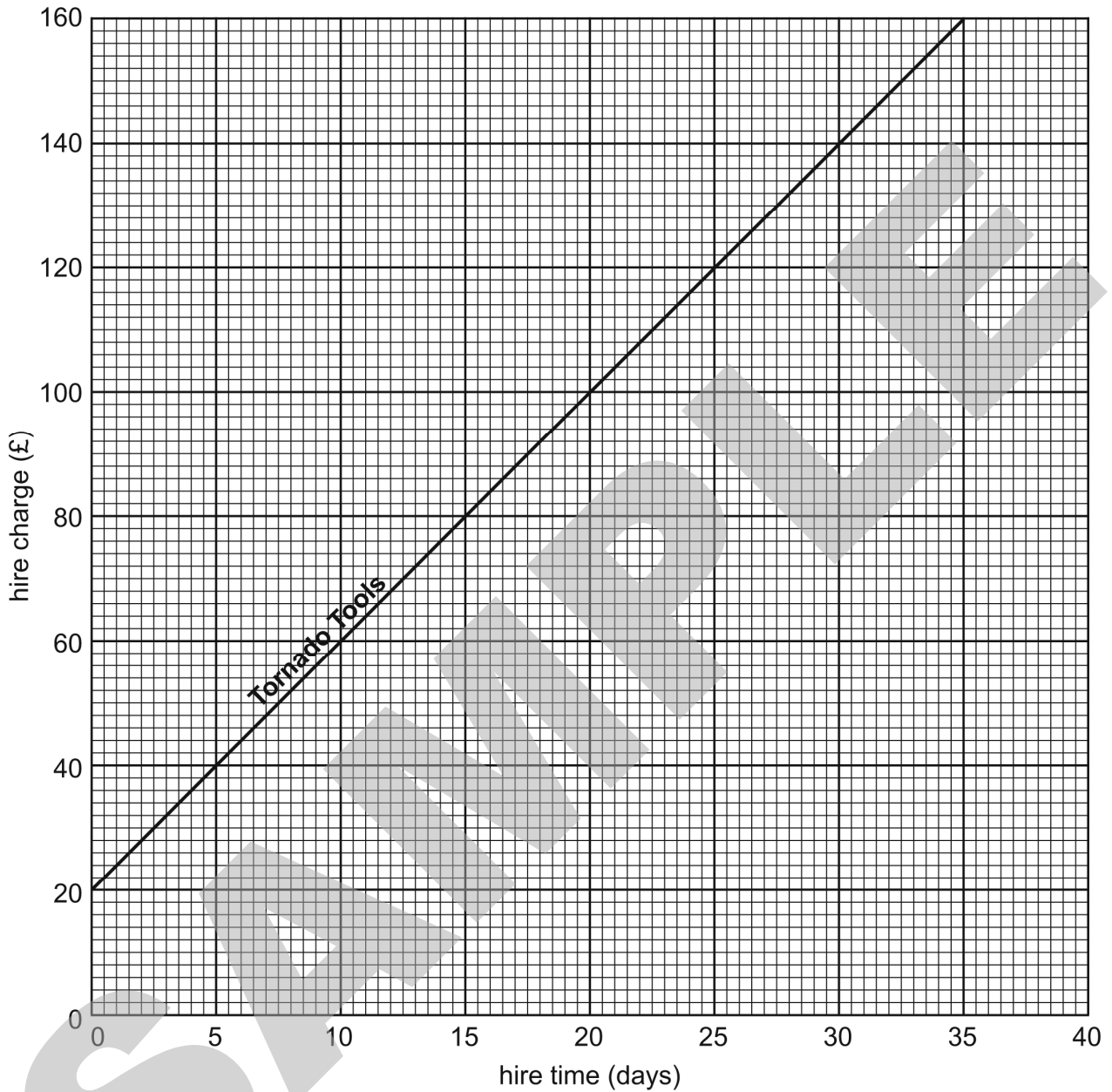
Which arrangement will be used?

Answer: by (3)

Year 6 Maths Test 3

6. (a) *Tornado Tools* hire out scaffolding.

The charges are shown in the graph below.



(i) What is the charge for 15 days' hire?

Answer: £ (1)

(ii) For how many days' hire is the charge £120?

Answer: days (1)

The charge is made up of a fixed amount plus £4 for each day.

(iii) What is the fixed amount?

Answer: £ (1)

(b) *Hurricane Hire* also hire out scaffolding.

They charge £60 plus £2 per day.

(i) Complete the table below. (2)

number of days	10	20	30
<i>Hurricane Hire</i> charge	100

(ii) On the grid in part (a), draw a line showing the *Hurricane Hire* charges. (2)

Use your graph to answer the following questions.

(c) (i) Which firm is cheaper for 25 days' hire?

Answer: (1)

(ii) For how many days do both firms charge the same amount?

Answer: days (2)

Year 6 Maths Test 3

- 7 Four girls decided to study small animals living beneath paving slabs in a garden.

The girls carefully raised one slab each and counted the numbers of animals they found.

The table below records their results.

	woodlice	snails	centipedes	millipedes	beetles
Shanna	2	0	1	1	3
Elaine	2	2	1	2	2
Caitlin	7	0	0	0	3
Jackie	3	1	0	2	2

- (i) Who found:

- (a) the most animals

Answer: (1)

- (b) the fewest animals?

Answer: (1)

- (ii) Which type of animal was:

- (a) the most common

Answer: (1)

- (b) the least common?

Answer: (1)

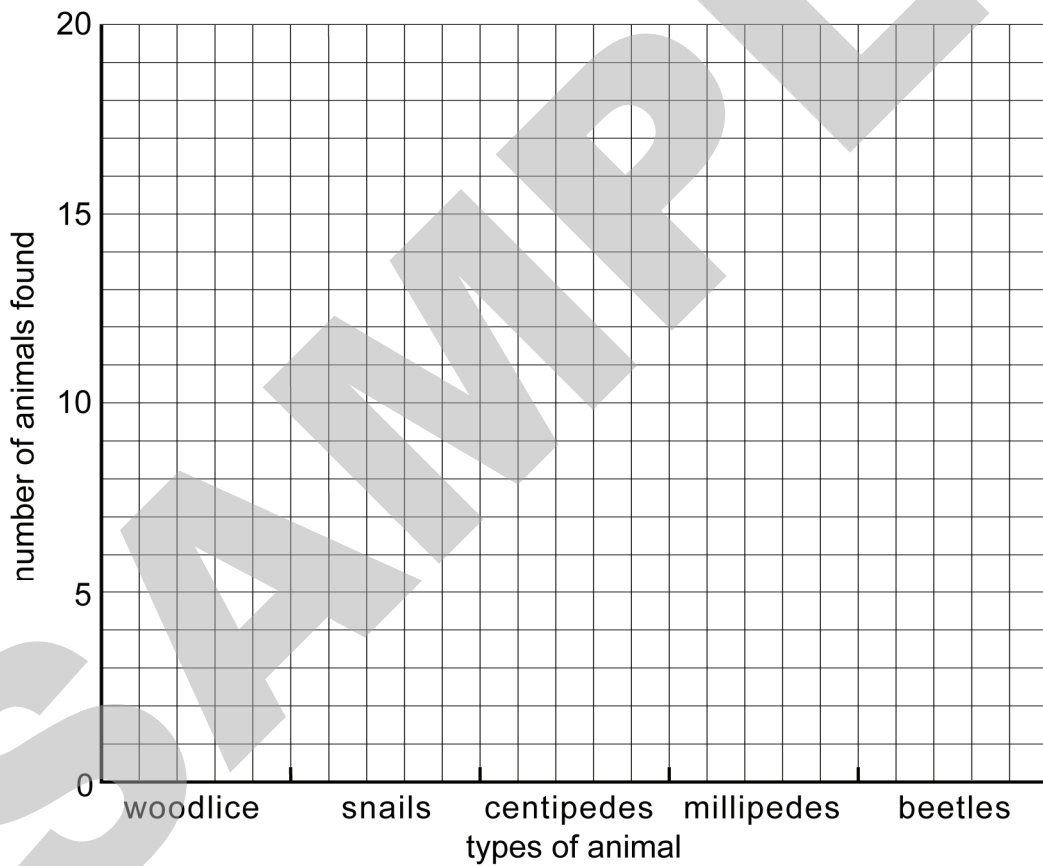
(iii) How many animals were found altogether?

Answer: animals (2)

(iv) What fraction of the four slabs had millipedes beneath them?

Answer: (1)

(v) On the grid, draw a bar chart to show the results of the survey. (3)



Year 6 Maths Test 3

8. (a) The captain of a rugby team calls 'heads' each time and wins the toss 18 times out of 20 with his lucky coin.

He always uses the same coin.

Is it a fair coin?

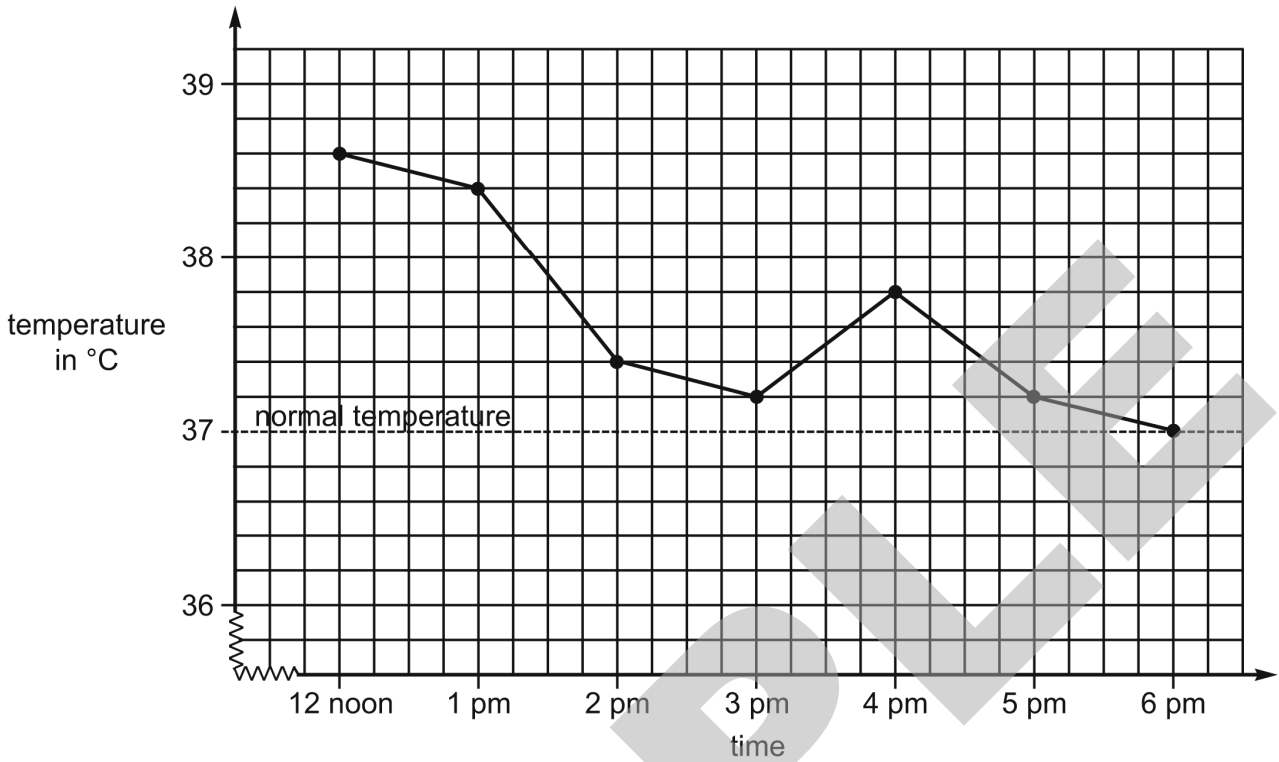
Answer: (3)

Reason:

..... (2)

SAMPLE

- (b) The graph below shows the temperature of a patient measured every hour between 12 noon and 6 pm on one day.



- (i) What was the patient's temperature at 12 noon?

Answer: °C (1)

- (ii) During which hour was the greatest change in the patient's temperature?

Answer: between and (1)

- (iii) What was this change?

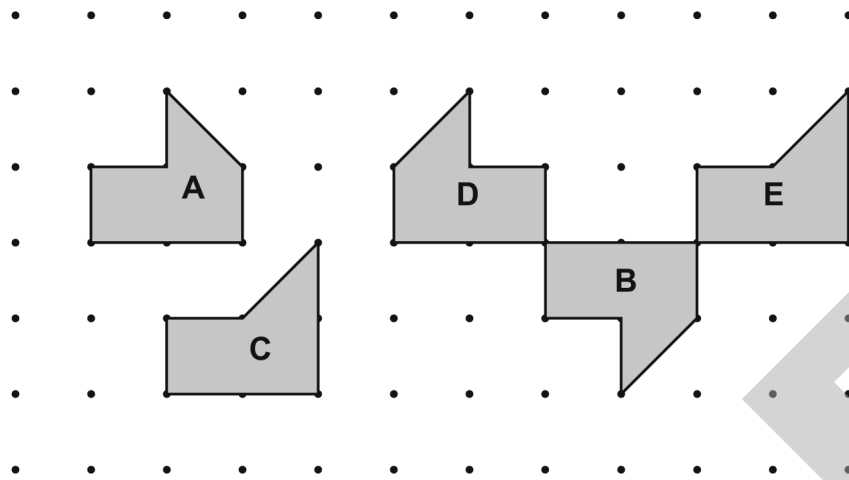
Answer: °C (2)

- (iv) The patient was given some medication at 12 noon.

Suggest what might have happened between 3 pm and 5 pm.

Answer: (1)

9. (a) Look at these shapes drawn on a square dotted grid.



Name a shape which is:

(i) a reflection of **A**

Answer: (1)

(ii) a rotation of **D**

Answer: (1)

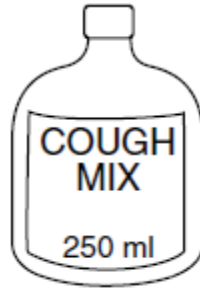
(iii) a translation of **C**

Answer: (1)

(iv) **not** congruent to **D**.

Answer: (1)

(b) In a chemist's shop you might see a bottle of medicine.



We could write:

units *millilitres* as a measure of *volume of medicine*

Which units might you see used:

(i) in a vegetable shop

Answer: units

as a measure of (1)

(ii) on a sign beside a road

Answer: units

as a measure of (1)

(iii) at a petrol station

Answer: units

as a measure of (2)

(iv) in a weather report?

Answer: units

as a measure of (2)

Year 6 Maths Test 3

10. (a) (i) Construct the kite $ABCD$ where AB and CB are both 5 cm, and AD and CD are both 8 cm.

(AC , one diagonal of the kite, is drawn for you.)

(3)



- (ii) Measure angle BAD .

Answer: ° (1)

- (iii) At what angle do the diagonals of a kite intersect?

Answer: ° (1)

- (iv) Draw the line of symmetry on your kite.

(1)

(b) For each of the following imperial measurements, choose the metric answer which is the nearest approximation.

(i) 15 miles

10 km 25 km 50 km

Answer: km (2)

(ii) 30 feet

8 m 9 m 10 m

Answer: m (1)

(iii) 18 pints

10 l 15 l 20 l

Answer: l (1)

SAMPLE

ISEB Assessments Year 6 Maths Test 3 Answers

Author: ISEB



This document consists of a full set of answers to the questions in Year 6 Maths Test 3.

Total marks: 100

These answers are part of *Year 6 Maths Test 3.zip*, which also contains:

Year 6 Maths Test 3.pdf

(the test)

Year 6 Maths Test 3 Teacher's Document.pdf

(the teacher's document)

REQUIRED PRINT SETTINGS

This document must be printed with Page Scaling set to 'None'.

It can be printed on A4, or on A3 in booklet form, according to your preference.

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Illustrations will not print to the correct scale if these settings are not applied.

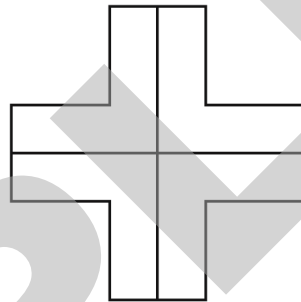
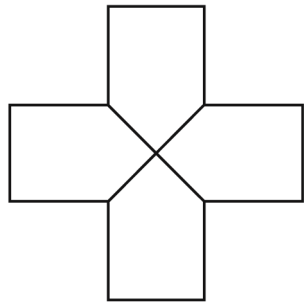
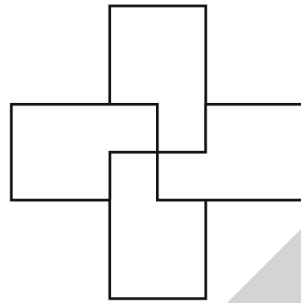
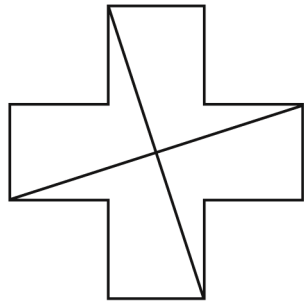
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Year 6 Maths Test 3 Answers

1. (a) (i) 11.72 m (2)
(ii) 2.93 m (2)
- (b) (i) 11 (1)
(ii) 16 (1)
(iii) 15 (1)
(iv) 8 (1)
- (c) (i) 32 (1)
(ii) 16 (1)
2. (a) (i) Moscow (1)
(ii) 32°C (2)
(iii) 11°C (4)
- (b) $\frac{3}{10}$, $\frac{1}{3}$, 38%, 0.4 (3)
3. (a) (i) 4 → **17** (1)
11 → **38** (1)
1 → 8 (1)
(ii) 12 (2)
- (b) (i) 52.5 (3)
(ii) 53 packets (2)
4. (a) (i) 2000 seats (probably 40 × 50 or similar method) (3)
(ii) 1872 seats (3)
- (b) (i) 18 km (2)
(ii) 7 kg (2)

5. (a) Crosses divided into four identical pieces (4)
 (1 mark each – two are easy to see, one is more difficult and one is decidedly tricky!)



- (b) (i) 6 by 4 (3)
 12 by 2
 24 by 1
 (ii) 6 by 4 (3)

SAMPLE

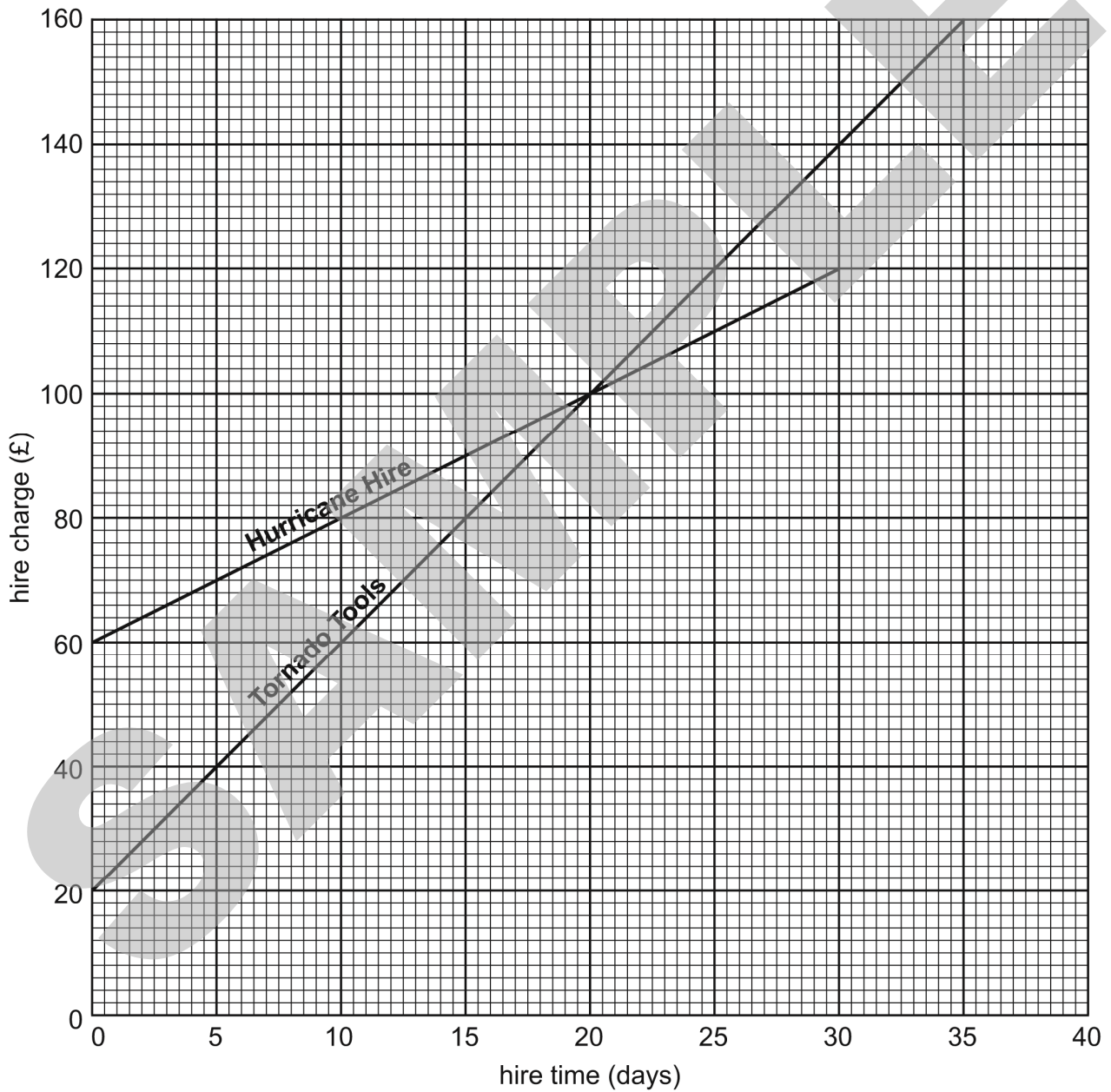
Year 6 Maths Test 3 Answers

6. (a) (i) £80 (1)
 (ii) 25 days (1)
 (iii) £20 (1)

- (b) (i) Completed table (2)

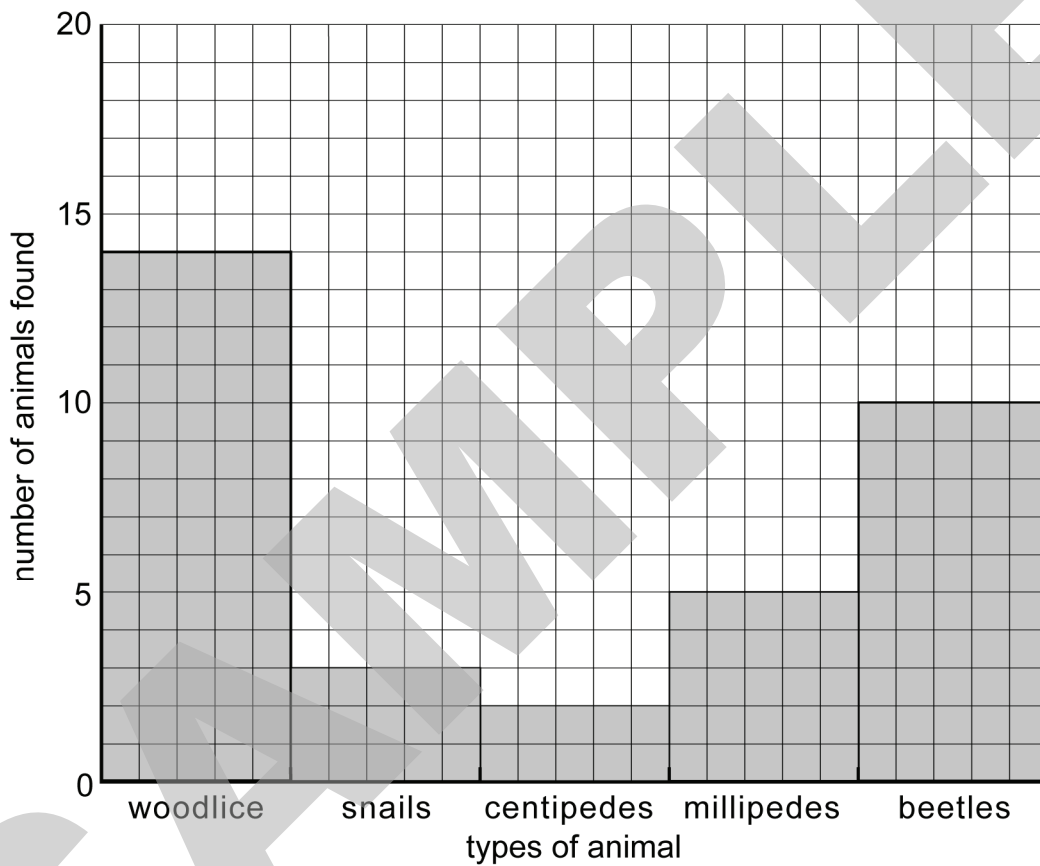
number of days	10	20	30
<i>Hurricane Hire</i> charge	80	100	120

- (ii) Graph drawn (2)



- (c) (i) *Hurricane Hire* (1)
 (ii) 20 days (2)

- 7 (i) (a) Caitlin (1)
 (b) Shanna (1)
- (ii) (a) Woodlice (1)
 (b) Centipedes (1)
- (iii) 34 animals (2)
- (iv) $\frac{3}{4}$ (1)
- (v) Completed bar chart (3)



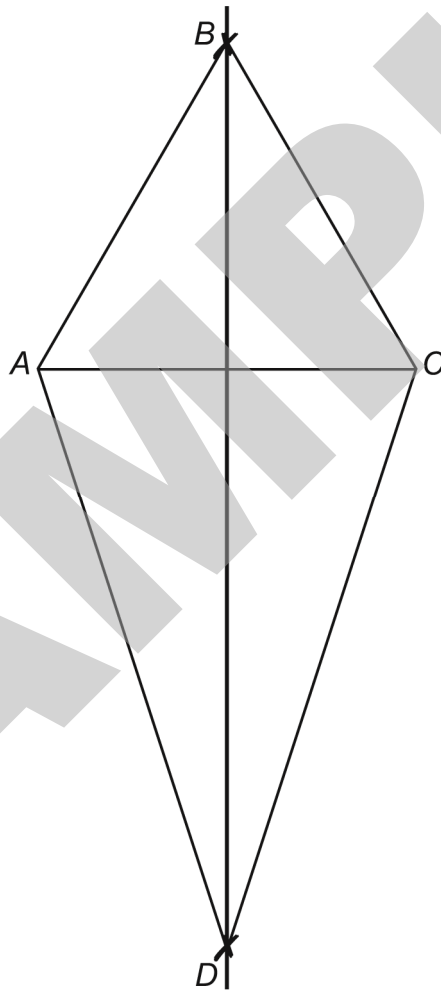
8. (a) No (3)
 The coin appears to be biased towards 'heads'. (2)
- (b) (i) 38.6°C (1)
 (ii) between 1 pm and 2 pm (1)
 (iii) 1°C (2)
 (iv) Answers vary; example: effects of medication wore off and more medication administered (1)

Year 6 Maths Test 3 Answers

9. (a) (i) **D** (1)
 (ii) **B** (1)
 (iii) **E** (1)
 (iv) **C or E** (1)

- (b) Answers may vary; examples:
 (i) kilograms mass (accept 'weight') (1)
 (ii) miles or kilometres distance (1)
 (iii) litres capacity or volume (2)
 (iv) degrees Celsius temperature (2)
 or centimetres rainfall, depth of snow (2)

10. (a) (i) Kite *ABCD* constructed (3)



- (ii) 132° (1)
 (iii) 90° (1)
 (iv) Line of symmetry drawn (1)

- (b) (i) 25 km (2)
 (ii) 9 m (1)
 (iii) 10 *l* (1)

ISEB Assessments

Year 6 Maths Test 3

Teacher's Document



This test contains a selected set of 10 questions aimed at Year 6 pupils.
The questions are arranged in a particular topic order as follows:

Topic	Question
Number	1
	2
Calculations	3
	4
Problems (including Handling Data)	5
	6
	7
	8
Shape, Space and Measures	9
	10

Total marks: 100

Total time allocated: 1 hour

Calculators are not allowed.

Teachers should feel free to use this resource in whatever way is most appropriate for their scheme of work. The test can be attempted all at once and is designed to take a Year 6 pupil approximately one hour to complete.

Some questions require pupils to explain their answers. If you feel that this is too demanding, pupils can be instructed to explain themselves orally to you or to the rest of the class in a discussion.

Please refer to the printing instructions provided on the next page of this teacher's document before printing copies of the test or the accompanying answers.

This teacher's document is part of *Year 6 Maths Test 3.zip*, which also contains:

Year 6 Maths Test 3.pdf (the test)
Year 6 Maths Test 3 Answers.pdf (the answers)

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