



- 1 A jug has marks every 50 ml up to 500 ml. The water is level with the third mark above the 200 ml line. Sam then pours out 120 ml.

How much water is left in the jug?

(2 marks)

$$200 + 3 \times 50 = 350 \text{ ml}$$

$$350 - 120 = 230$$

230 ml

- 2 Here are five numbers.

3407 3047 3470 3074 3740

Write the numbers in order of size. Start with the smallest number.

(2 marks)

All five numbers have 3 thousands, so compare the hundreds:

3047 and 3074 have 0 hundreds

3047 has 4 tens and 3074 has 7 tens, so 3047 is smaller

Then 3407 and 3470 (4 hundreds), then 3740 (7 hundreds)

Order: 3047, 3074, 3407, 3470, 3740

3047, 3074, 3407, 3470, 3740

- 3 Tickets for a school play cost £4 each. The table shows the number of tickets sold on each of four days. 70 tickets were sold altogether. The bar for Thursday has not been drawn.

Day	Mon	Tue	Wed	Thu
Tickets sold	15	22	18	?

a. Work out the number of tickets sold on Thursday.

b. Work out the total money taken from all 70 tickets.

(3 marks)

a.)

$$15 + 22 + 18 = 55$$

$$70 - 55 = 15$$

15 tickets

b.)

$$70 \times 4 = 280$$

£280

4

- a. A quadrilateral has exactly one pair of parallel sides. Write down the mathematical name of this quadrilateral.
- b. A different quadrilateral has two pairs of parallel sides. All four of its sides are equal in length but none of its angles are right angles. Write down the mathematical name of this quadrilateral. (2 marks)

A quadrilateral with exactly one pair of parallel sides is a trapezium

A quadrilateral with two pairs of parallel sides and four equal sides is a rhombus (it would only be a square if it also had right angles)

5

Choose the best word from **impossible, unlikely, evens, likely, certain** for each event.

- a. A fair coin lands on heads.
- b. It will be daytime somewhere in the world at some point tomorrow.
- c. An ordinary dice lands on 7.

(3 marks)

a)

Heads and tails equally likely
evens

b)

Sure to happen: certain

c)

Dice only has 1 to 6: impossible

a) evens b) certain c) impossible

6

A theatre sells tickets over three days.

Day	Tickets sold
Friday	1246
Saturday	2085
Sunday	1539

Work out the total number of tickets sold.

(2 marks)

Add the first two days

$$1246 + 2085 = 3331$$

Then add Sunday

$$3331 + 1539 = 4870$$

4870 tickets

7

Amy works in a shop.

Last week she worked 28 hours at her normal rate of £9.50 per hour.

She also worked 6 hours at a higher rate of £14.25 per hour.

Work out the total amount Amy earned last week.

(3 marks)

Normal pay

$$28 \times £9.50 = £266$$

Higher-rate pay

$$6 \times £14.25 = £85.50$$

Total

$$£266 + £85.50 = £351.50$$

$$£351.50$$

8

A delivery van leaves a depot at 10:47 and arrives at a warehouse at 13:12 on the same day.

Work out the length of the journey in minutes.

(2 marks)

From 10:47 to 11:00 is 13 minutes

From 11

00 to 13:00 is 2 hours = 120 minutes

From 13:00 to 13:12 is 12 minutes

$$13 + 120 + 12 = 145 \text{ minutes}$$

$$145$$

9

Jade is paid £11.20 per hour for hours worked on weekdays.

For hours worked at the weekend she is paid 1.5 times her weekday rate.

Last week Jade worked 30 hours on weekdays and 4 hours at the weekend.

Work out Jade's total pay for last week.

(4 marks)

Weekend rate

$$1.5 \times £11.20 = £16.80 \text{ per hour}$$

Weekday pay

$$30 \times £11.20 = £336$$

Weekend pay

$$4 \times £16.80 = £67.20$$

Total pay

$$£336 + £67.20 = £403.20$$

$$£403.20$$

- 10 Here are the first four terms of a sequence.

96 48 24 12

- a. Write down the next term of the sequence.
b. Work out the 8th term of the sequence.

(3 marks)

Each term is half the term before, so the 5th term is $12 \div 2 = 6$

Keep halving

6th term = 3, 7th term = 1.5, 8th term = 0.75

- 11 A thermometer has marks every 2°C . In the morning the liquid is at the third mark above 10°C . In the afternoon it is at the second mark above 20°C .

Work out how many degrees the temperature has risen.

(2 marks)

Morning: $10 + 3 \times 2 = 16$

Afternoon: $20 + 2 \times 2 = 24$

$$24 - 16 = 8$$

8°C

- 12 Here is a probability scale, labelled from 0 to 1.

- a. Mark with a cross the probability that a fair coin lands on tails.
b. Mark with a cross the probability that an ordinary fair dice lands on the number 8.



(2 marks)

A fair coin lands on tails with probability $\frac{1}{2}$, so the cross goes exactly halfway between 0 and 1

An ordinary dice only shows 1 to 6, so landing on 8 is impossible and the cross goes at 0

- 13 Work out 417×6

(2 marks)

Split $417 = 400 + 17$

$$400 \times 6 = 2400$$

$$17 \times 6 = 102$$

$$2400 + 102 = 2502$$

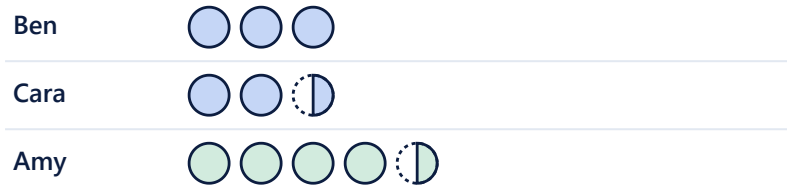
2502

- 14 The pictogram shows the number of muffins three friends sold at a school fair. The key is missing.

Key: ● represents muffins

Ben sold 18 muffins.

- Complete the key.
- Write down the number of muffins Cara sold.
- Amy sold 27 muffins. How many circles should be drawn for Amy?



Key:  = 6 muffins

(4 marks)

a) Ben's 3 circles represent 18 muffins, so each circle represents $18 \div 3 = 6$ muffins

b) Cara

$$2.5 \times 6 = 15 \text{ muffins}$$

c) Amy

27 divided by 6 = 4.5, so 4 full circles and 1 half circle

- 15 Write these numbers in order, starting with the smallest.

4,502 4,052 4,205 4,025

(2 marks)

Same thousands, so compare hundreds

4,025 and 4,052: 0 hundreds

4,205: 2 hundreds

4,502: 5 hundreds

025 has 2 tens, 052 has 5 tens

4,025, 4,052, 4,205, 4,502

- 16 A library has 3406 books. On Saturday, 1879 of the books are borrowed.

How many books are left in the library?

(2 marks)

$$3406 - 1879$$

$$3406 - 1900 = 1506$$

$$1506 + 21 = 1527$$

1527 books

17 Work out 243×3

(2 marks)

Split $243 = 200 + 40 + 3$

$$200 \times 3 = 600$$

$$40 \times 3 = 120$$

$$3 \times 3 = 9$$

$$600 + 120 + 9 = 729$$

729

- 18 a. Write down the number of faces of a cube.
b. Write down the number of vertices of a cube.

(2 marks)

A face is a flat surface of the cube. An edge is where two faces meet, and a vertex is a corner where edges meet. Count the hidden faces and corners too

A cube has 6 square faces

A cube has 8 vertices, one at each corner

- 19 The pictogram shows the number of cakes a stall sold on Saturday and Sunday.

Key: ● represents 4 cakes

Each cake was sold for £2.40.

Work out the total amount of money the stall took from selling cakes on Saturday and Sunday.

Saturday ○○○○○

Sunday ○○○

Key: ○ = 4 cakes

(4 marks)

Saturday

$$4.5 \times 4 = 18 \text{ cakes}$$

Sunday

$$2.5 \times 4 = 10 \text{ cakes}$$

Total cakes

$$18 + 10 = 28$$

Total money

$$28 \times £2.40 = £67.20$$

£67.20

20

Here are the first five terms of a Fibonacci sequence.

2 3 5 8 13

- Write down the next term of the sequence.
- Describe the rule for finding the next term of the sequence.

(2 marks)

In a Fibonacci sequence each term is the sum of the two terms before it

Check

$$2 + 3 = 5, 3 + 5 = 8, 5 + 8 = 13$$

The next term is $8 + 13 = 21$