

Counting in 6s

0	6	12	18	24	30	36	42	48	54	60
---	---	----	----	----	----	----	----	----	----	----

Counting in 7s

0	7	14	21	28	35	42	49	56	63	70
---	---	----	----	----	----	----	----	----	----	----

Counting in 9s

0	9	18	27	36	45	54	63	72	81	90
---	---	----	----	----	----	----	----	----	----	----

Counting in 25s

0	25	50	75	100	125	150	175	200	225	250
---	----	----	----	-----	-----	-----	-----	-----	-----	-----

Counting in 1000s

0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10 000
---	------	------	------	------	------	------	------	------	------	--------

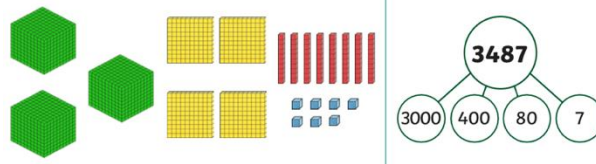
3487

three thousand, four hundred and eighty-seven

Representing 4 Digit Numbers

1000s	100s	10s	1s

Thousands	Hundreds	Tens	Ones
1000 1000 1000	100 100 100	10 10 10 10	1 1 1 1



Comparing Numbers

2497	2508	3012	3521	3530	4002
------	------	------	------	------	------

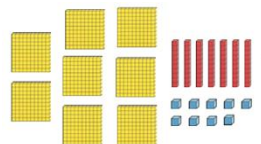
smallest

greatest

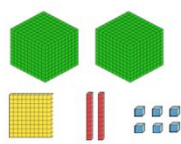
Th	H	T	O
4	3	2	4

4324 > 3243
greater than

Th	H	T	O
3	2	1	2

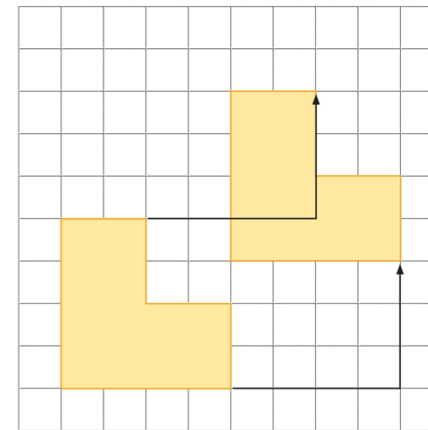
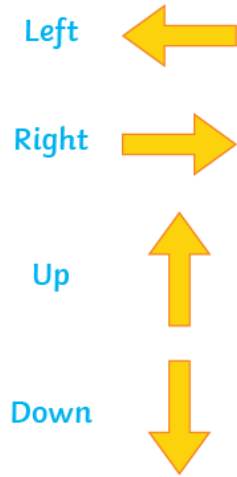
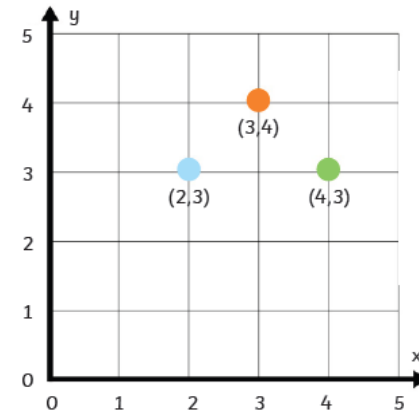


879 < 2126
less than



1000 Less		1000 More
1000 100 10 1	1000 100 10 1	1000 100 10 1
1212	2212	3212

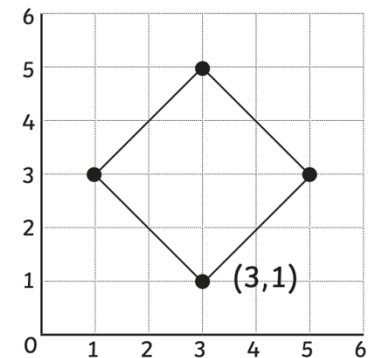
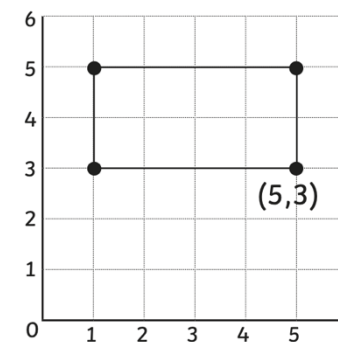
The x-axis coordinate always comes first, with the y-axis coordinate after it. Just like in the alphabet, x comes before y!



In maths, translation means moving an object on a grid. The object is moved without changing the size, turning or reflecting it.

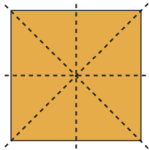
When translating an object on a grid, it can be moved up or down, left or right.

Each vertex (corner) of a 2D polygon can be represented as a coordinate on a 2D grid.

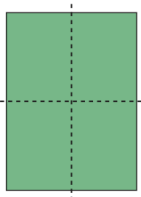


Lines of symmetry may be horizontal, vertical or diagonal. Some 2D shapes will have no lines of symmetry and some 2D shapes will have multiple lines of symmetry.

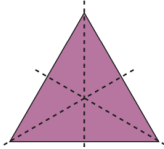
A square has four lines of symmetry.



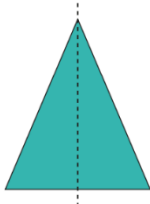
A rectangle has two lines of symmetry.



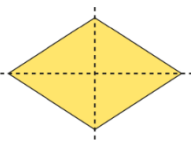
An equilateral triangle has three lines of symmetry.



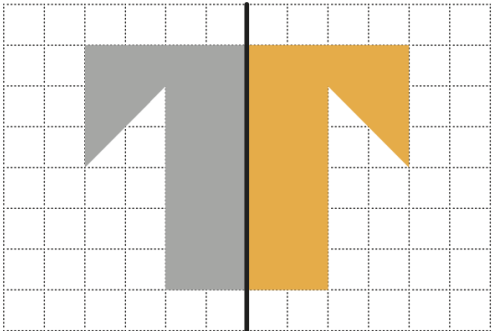
An isosceles triangle has one line of symmetry.



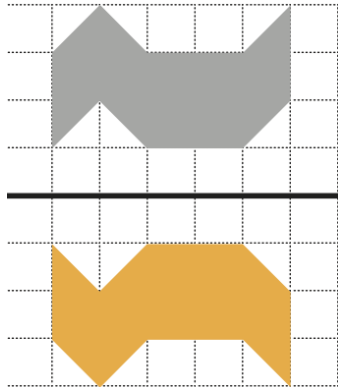
A rhombus has two lines of symmetry.



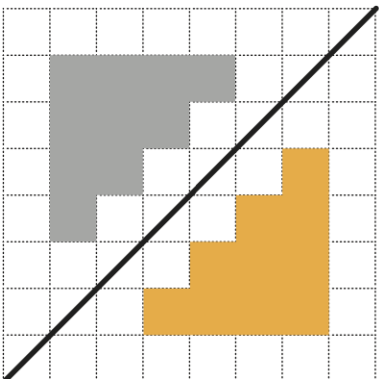
Patterns and shapes can be reflected in a mirror line. Mirror lines can be vertical. Horizontal or diagonal.



Vertical



Horizontal

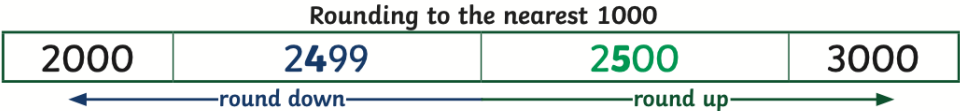
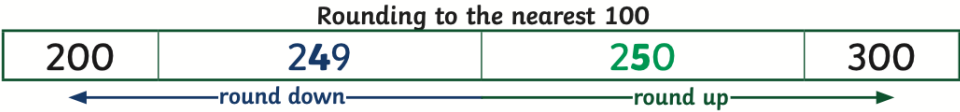
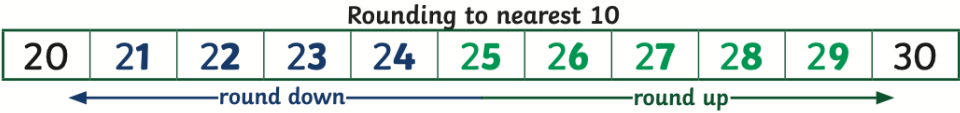


Diagonal



Rounding Numbers

Look at the place value column to the right of the value you are rounding to. If this digit is a 4 or less, round down. If the digit is a 5 or more, round up.



Roman Numerals

one	1	I
five	5	V
ten	10	X
fifty	50	L
one hundred	100	C

XVIII = 18

XXIX = 29

LXXXIV = 84

Negative Numbers



Checking Strategy for adding and subtracting

Inverse operations

$$1230 + 3589 = 4819$$

$$3589 + 1230 = 4819$$

$$4819 - 1230 = 3589$$

$$4819 - 3589 = 1230$$

Using Inverse

3476
2732 744

$3476 - 744 = 2732$ can be checked using

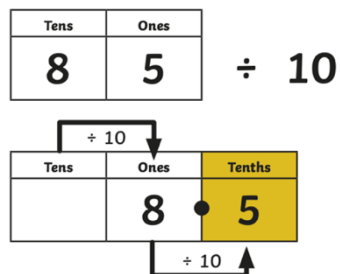
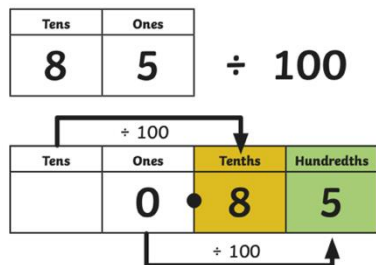
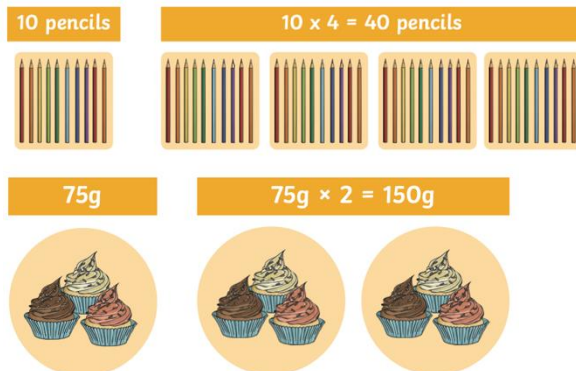
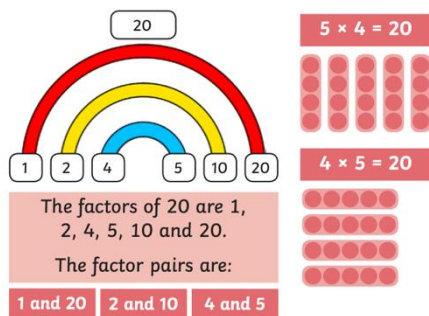
$$2732 + 744 = 3476$$

This part whole shows the inverse calculations using these three numbers.



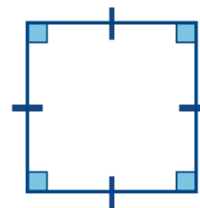
$1549 + 2688 = 4237$	$2688 + 1549 = 4237$
$4237 - 1549 = 2688$	$4237 - 2688 = 1549$

Factors

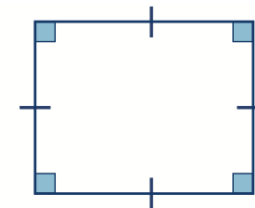


Quadrilaterals

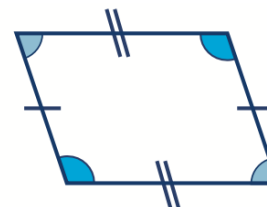
A quadrilateral is a polygon with four sides.



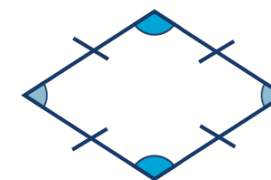
A square has four sides of equal length and four right angles (90°). A square is also a rectangle, a rhombus and a parallelogram.



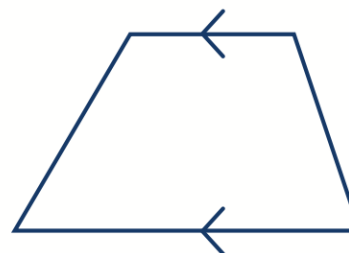
A rectangle has two pairs of parallel, equal sides and four right angles. A rectangle is also a parallelogram.



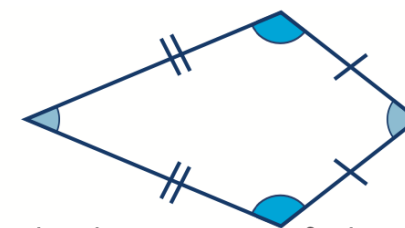
A parallelogram has two pairs of parallel, equal sides and opposite equal angles.



A rhombus has four sides of equal length and opposite equal angles. A rhombus is also a parallelogram.



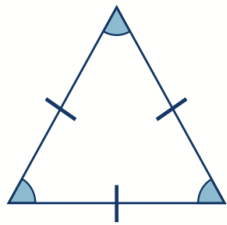
A trapezium only has one pair of opposite parallel sides.



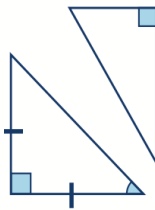
A kite has two pairs of adjacent equal sides and one pair of opposite equal angles.

Triangle

Triangles have 3 sides and 3 vertices. The total of angles in a triangle is 180 degrees.

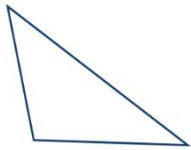


An equilateral triangle is a regular polygon. It has sides of equal length and each angle is 60° .

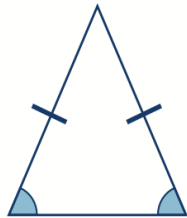


A right-angled triangle always has one 90° angle.

It can be isosceles or scalene.



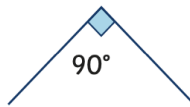
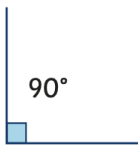
A scalene triangle has no equal sides or angles.



An isosceles triangle has two sides of equal length and two angles of equal size.

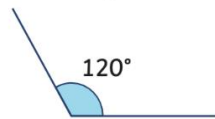
Right angle

The intersection of perpendicular lines creates a right angle.



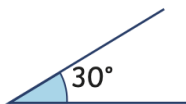
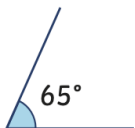
Obtuse angle

Any angle measuring more than 90 degrees but less than 180 degrees is obtuse.



Acute angle

Any angle measuring more than 0 degrees and less than 90 degrees is acute.



Area is the amount of space inside a 2D shape.

Perimeter is the total distance around a 2D shape.



Finding the Perimeter

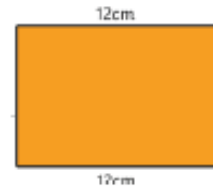
The **perimeter** of this triangle is:

$$5\text{cm} + 5\text{cm} + 5\text{cm} = 15\text{cm}$$

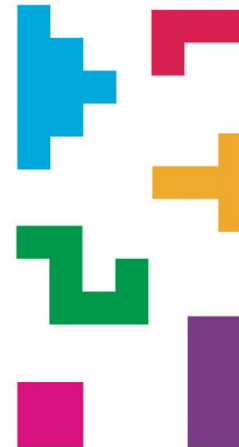


The **perimeter** of this rectangle is:

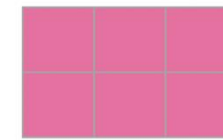
$$12\text{cm} + 12\text{cm} + 8\text{cm} + 8\text{cm} = 40\text{cm}$$



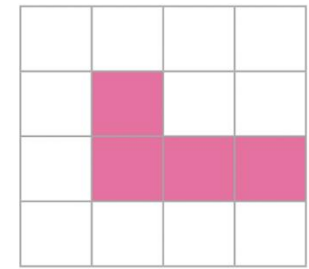
We can count squares to find the area of a rectilinear shape



Area = 1 square



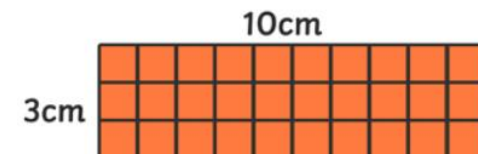
Area = 6 squares



Area = 4 squares

A rectilinear figure is a 2D shape whose sides all meet at right angles (90 degrees).

The area:
 $10\text{cm} \times 3\text{cm}$
 $= 30\text{cm}^2$



numerator



denominator



tenth



equivalent fraction

$$\frac{1}{2} = \frac{2}{4}$$

hundredth 15.39

decimal 178.05

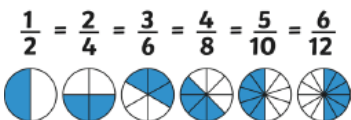
$$\frac{1}{2} = \frac{1}{2} = 0.5$$

$$\frac{1}{4} = \frac{1}{4} = 0.25$$

$$\frac{3}{4} = \frac{3}{4} = 0.75$$

$$\frac{1}{10} = \frac{1}{10} = 0.1$$

$$\frac{1}{2} \text{ is equal to...}$$



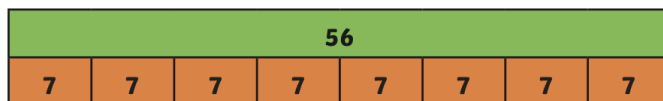
To find a fraction of a number, divide by the denominator and multiply by a numerator.

To find quarters of 20:



$$\frac{1}{4} \text{ of } 20 = 5 \quad \frac{2}{4} \text{ of } 20 = 10 \quad \frac{3}{4} \text{ of } 20 = 15 \quad \frac{4}{4} \text{ of } 20 = 20$$

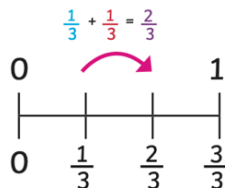
To find eighths of 56:



$$\begin{aligned} \frac{1}{8} \text{ of } 56 &= 7 & \frac{2}{8} \text{ of } 56 &= 14 & \frac{3}{8} \text{ of } 56 &= 21 & \frac{4}{8} \text{ of } 56 &= 28 \\ \frac{5}{8} \text{ of } 56 &= 35 & \frac{6}{8} \text{ of } 56 &= 42 & \frac{7}{8} \text{ of } 56 &= 49 & \frac{8}{8} \text{ of } 56 &= 56 \end{aligned}$$

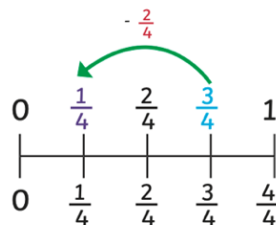
Fractions can be added when the denominators are the same.

$$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$$

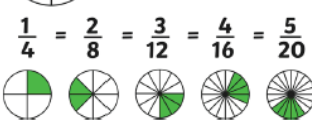


Fractions can be subtracted when the denominators are the same.

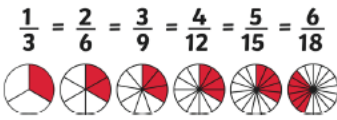
$$\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$$



$$\frac{1}{4} \text{ is equal to...}$$



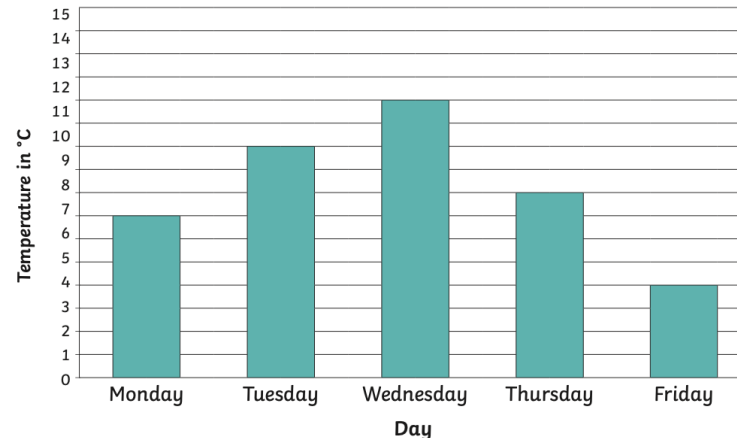
$$\frac{1}{3} \text{ is equal to...}$$



Time graphs show the changing of data over time.

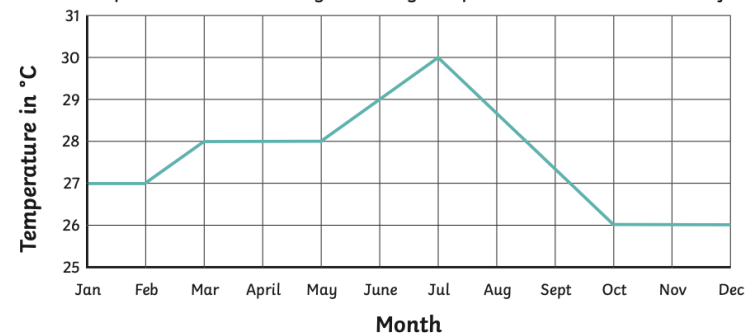
Here is a bar chart which shows the change in temperature over five days.

A Bar Chart to Show the Temperature at Lunchtimes



Here is a line graph which shows the change in temperature over twelve months.

A Line Graph to Show the Average Monthly Temperature in the Borneo Rainforest





$$463\text{p} = \text{£}4.63$$

$$705\text{p} = \text{£}7.05$$

$$92\text{p} = \text{£}0.92$$



Convert

Value

Decimal



We can compare or order amounts by changing all amounts to either pounds or pence.

Order in ascending order:

516p 156p £1.65 £6.51

$$\text{£}1.65 = 165\text{p} \text{ and } \text{£}6.51 = 651\text{p}$$

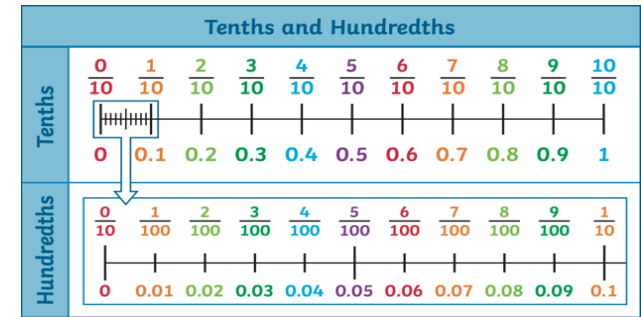
156p, £1.65, 516p, £6.51

£4.82 428p

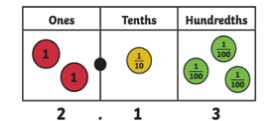
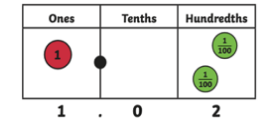
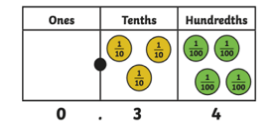
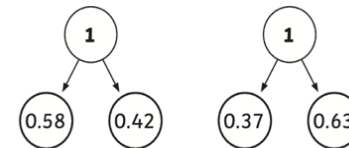
$$\text{£}4.82 = 482\text{p}$$

$$482\text{p} > 428\text{p}$$

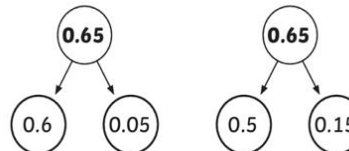
$$\text{£}4.82 > 428\text{p}$$



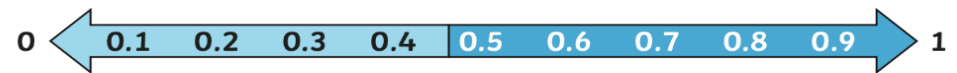
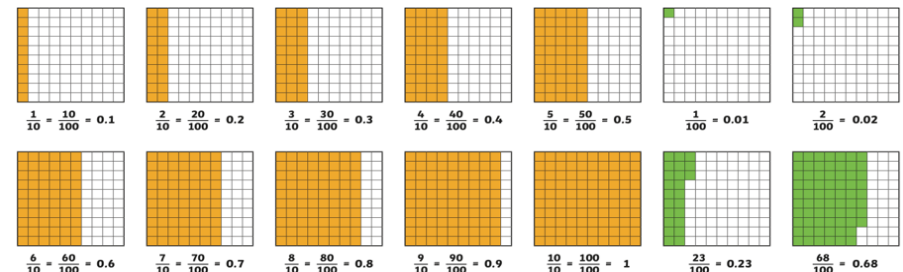
Make a Whole



Partitioning Tenths and Hundredths



Tenth and Hundredth Decimal Equivalents



If the tenths digit is **1, 2, 3 or 4**, we round **down** to the nearest whole number.

If the tenths digit is **5, 6, 7, 8 or 9**, we round **up** to the nearest whole number.

Capacity

1 litre = 1000 millilitres
1 centilitre = 10 millilitres



l
cl
ml

Length

1 kilometre = 1000 metres
1 metre = 100 centimetres
1 centimetre = 10 millimetres



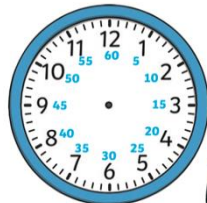
km
m
cm
mm

Mass

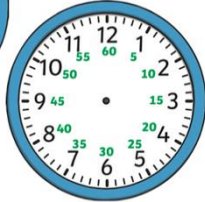
1 tonne = 1000 kilograms
1 kilogram = 1000 grams
1 gram = 1000 milligrams



t
kg
g
mg



There are
60 seconds
in a minute.



There are
60 minutes
in an hour.



There are
24 hours
in a day



There are
7 days
in a week.



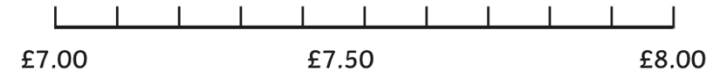
There are
12 months
in a year.

12-hour time	24-hour time	12-hour time	24-hour time
12am (midnight)	00:00	12pm (noon)	12:00
1am	01:00	1pm	13:00
2am	02:00	2pm	14:00
3am	03:00	3pm	15:00
4am	04:00	4pm	16:00
5am	05:00	5pm	17:00
6am	06:00	6pm	18:00
7am	07:00	7pm	19:00
8am	08:00	8pm	20:00
9am	09:00	9pm	21:00
10am	10:00	10pm	22:00
11am	11:00	11pm	23:00

Estimating Money



That's about £8.



That's about £4.



They are about £3 and £7
so will be about £10 in total.

They are about £4 and £3
so will be about £7 in total.
I will have about £3 left.

