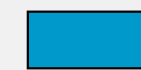


Definition: Quadrilateral is "A closed 4 sided linear shape"

A few types of special quadrilaterals



Square



Rectangle



Kite



Rhombus



Parallelogram



Trapezium

**Quadrilaterals**

When working out time difference we will use the Counting Method. This method will always work.

**Example:** Find the time difference between 08 46 hrs and 11 52 hrs

08 46	nearest hour ⇓	09 00	Hrs	Mins
09 00	hours ⇓	11 00	2	14
11 00	What's left	11 52		
			+	52
			2	66

60 mins = 1hr  
3 hrs 6 mins

**Time**

**Example:** The ratio of boys to girls is 4:5. If there are 16 boys, how many girls are there.

boys	girls
4	5
$\times 4$	$\times 4$
16	20

**Ratio**

**S1 Mathematics Level E Course**

**Main parts of the circle**

radius  $r = \frac{1}{2}D$

Diameter  $D = 2r$

Circumference  $C = \pi D$

**The Circle**

Example: Complete the rest of the shape given the line of symmetry.

The order of symmetry is the number of times a shape looks the same in one complete turn.

Has order 2

Has order 3

Has order 4

**Symmetry**

**Fractions, Decimals and Percentages**

Just different ways of saying the same thing.

**Fractions Decimals Percentages**

**Scale Drawings**

**Scale Drawings**

**Solution** Using a scale of 1cm = 2m

Step 1: Draw line XY=3cm

Step 2: Draw a line straight up from Y.

Step 3: Measure angle 55° from X.

Step 4: Draw line from X to vertical line and mark T at crossover point.

Step 5: Measure length YT. 4.3cm

Step 6: Multiply length YT. by scale factor.

$4.3 \times 2 = 8.6m$

Flag pole is 8.6m high

**Scale Drawings**

For balance we have

Subtract 6 from each side  $5a + 6 = 3a + 16$

Subtract 3a from each side  $5a = 3a + 10$

Divide each side by 2  $2a = 10$

$a = 5$

Adult ticket price is £5

**Solving Equations (Balancing Method)**

Number of Tables	1	2	3	4	5
Number of Surfers	5	7	9	11	13

2 2 2 2

Step 1: Find difference

Step 2: Part of the Formula  $S = 2T$

Step 3: Correction factor "add on 2"  $S = 2T + 3$

Same difference linear pattern

Find a number so formula works

**Linear Patterns**

Angles round a point Add up to 360°

Angles opposite each other at a cross are equal.

Two angles making a straight line add to 180°

3 angles in a triangle ALWAYS add up to 180°.

**Angles**

**Example** Find the surface area of the cuboid

Working

Front Area =  $l \times b = 5 \times 4 = 20cm^2$

Top Area =  $l \times b = 5 \times 3 = 15cm^2$

Side Area =  $l \times b = 3 \times 4 = 12cm^2$

Total Area =  $20 + 20 + 15 + 15 + 12 + 12 = 94cm^2$

**Surface Area**

**Working**

Volume =  $l \times b \times h$

$V = 18 \times 5 \times 27$

$V = 2430 cm^3$

**Volume**

Calculate the area of this shape

$A = \frac{1}{2}bh$

$A = \frac{1}{2} \times 6 \times 12$

$A = 36cm^2$

Calculate the area of this shape

Rectangle 1

$A = l \times b$

$A = 16 \times 5 = 80cm^2$

Rectangle 2

$A = l \times b$

$A = 6 \times 5 = 30cm^2$

Total Area =  $80 + 30 = 110cm^2$

**Length Perimeter Area**

**Problem** Below is a draw of the school building. Calculate the perimeter.

$x = 12 - 9 = 3m$

Perimeter =  $12 + 8 + 3 + 4 + 9 + 4 = 40m$