The Birkenhead Park School

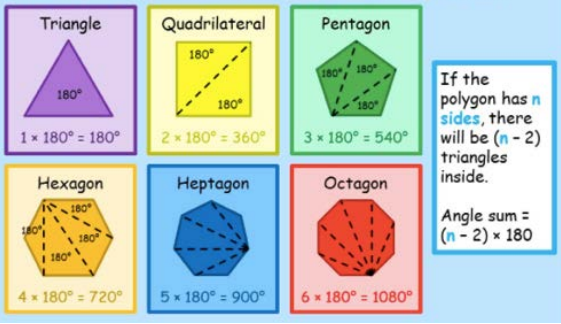
Year 10 Foundation Knowledge Organiser

Key Words

Polygon	A straight sided shape
Product of Primes	A prime number is **any number with no divisors other than itself and 1**, such as **2 and 11**. Any number can be written as a product of prime numbers in a unique way
Hypotenuse	The longest side of a right angles triangle that is opposite the right angle
Sector	A part of a circle that is represented in a pie chart

Angles in Polygons

We can work out the angle sum of any polygon by splitting it into triangles. Remember that the angles in a triangle = 180°.



Key Information

Improper Fractions and Mixed Numbers

$2\frac{2}{3} = \frac{8}{3}$

There are 3 thirds in 1.

So there are 2 × 3 = 6 thirds in 2.

We also have an extra 2 thirds, so add this on.

In total, 2 × 3 + 2 thirds
8 thirds altogether

$3\frac{5}{6} = \frac{23}{6}$

There are 6 sixths in 1.

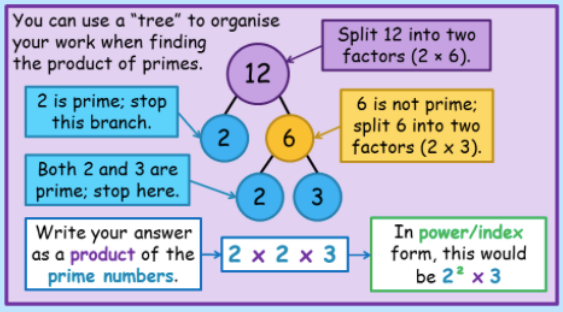
So there are 3 × 6 = 18 sixths in 3.

We also have an extra 5 sixths, so add this on.

In total, 3 × 6 + 5 sixths
23 sixths altogether

Product of primes

Any composite number can be split up into a product of prime factors – primes which multiply to give the original number.



Frequency Tables

The table gives information about the numbers of badges gained by the girls in a Guide group.

a) Write down the mode.
b) Find the range.
c) Work out the median.
d) Calculate the mean.

Number of badges	Frequency	fx
0	2	0
1	8	8
2	4	8
3	3	9
4	5	20
5	3	15

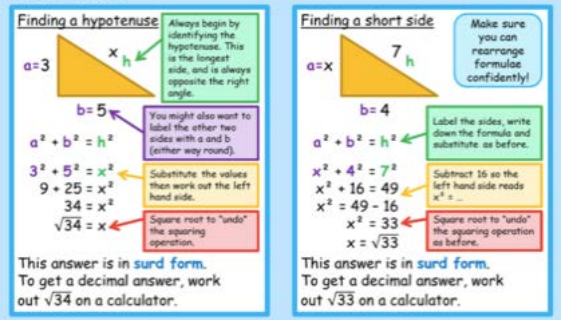
a) 1
b) 5 – 0 = 5
c) 25 Guides altogether
$\frac{25+1}{2}$ = 13th Guide
13th Guide has 2 badges

d) Total number of badges = 60
Total number of Guides = 25
60 ÷ 25 = 2.4 badges

Mode = most frequent
Range = biggest - smallest
Median = middle
Mean = mathematical average (add, then divide)

Pythagoras

You can use Pythagoras' Theorem to find a missing side length in a right-angled triangle.



Pie Charts