

Year 6 Mathematics Knowledge Organiser

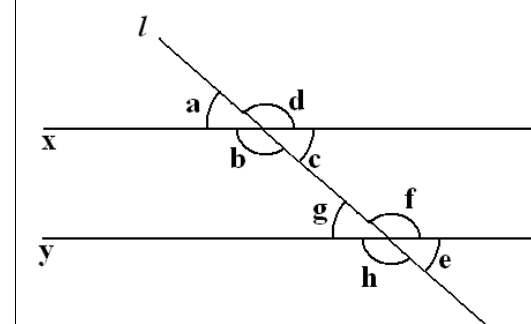
Place Value Columns

ten millions	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	.	tenths	hundredths	thousandths
1×10^7	1×10^6	1×10^5	1×10^4	1×10^3	1×10^2	1×10^1	1×10^0	.	1×10^{-1}	1×10^{-2}	1×10^{-3}
10.000.000	1.000.000	100.000	10.000	1000	100	10	1	.	0.1	0.01	0.001

Roman Numerals

I	1
V	5
X	10
L	50
C	100
D	500
M	1000

Angles at Intersecting Lines



lines x and y are parallel

Angles	Name	Relationship
a & c b & d e & g f & h	vertically opposite	equal
a & g b & h c & d e & f	corresponding	equal
a & e d & h	alternate exterior	equal
b & f c & g	alternate interior	equal
b & g c & f	consecutive interior	total 180°
a & h d & e	consecutive exterior	total 180°

Fraction/ Decimal Equivalence

$\frac{1}{8}$	0.125	12.5%	$\frac{1}{10}$	0.1	10%	$\frac{1}{100}$	0.01	1%
$\frac{2}{8} = \frac{1}{4}$	0.25	25%	$\frac{2}{10} = \frac{1}{5}$	0.2	20%	$\frac{2}{100}$	0.02	2%
$\frac{3}{8}$	0.375	37.5%	$\frac{3}{10}$	0.3	30%	$\frac{3}{100}$	0.03	3%
$\frac{4}{8} = \frac{1}{2}$	0.5	50%	$\frac{4}{10} = \frac{2}{5}$	0.4	40%	$\frac{4}{100}$	0.04	4%
$\frac{5}{8}$	0.625	62.5%	$\frac{5}{10}$	0.5	50%	$\frac{5}{100}$	0.05	5%
$\frac{6}{8} = \frac{3}{4}$	0.75	75%	$\frac{6}{10} = \frac{3}{5}$	0.6	60%	$\frac{6}{100}$	0.06	6%
$\frac{7}{8}$	0.875	87.5%	$\frac{7}{10}$	0.7	70%	$\frac{7}{100}$	0.07	7%
$\frac{8}{8} = 1$	1	100%	$\frac{8}{10} = \frac{4}{5}$	0.8	80%	$\frac{8}{100}$	0.08	8%
			$\frac{9}{10}$	0.9	90%	$\frac{9}{100}$	0.09	9%
			$\frac{10}{10} = 1$	1	100%	$\frac{10}{100}$	0.1	10%

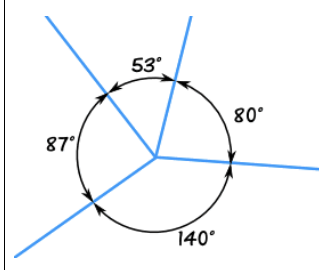
Fraction, Decimal and Percentage Conversion

Fractions to Decimals	numerator ÷ denominator	$1/4 = 1 \div 4 = 0.25$
Fractions to Percentages	numerator ÷ denominator x 100	$1/4 = 1 \div 4 = 0.25$ $0.25 \times 100 = 25\%$
Decimals to Fractions	-write decimal as a fraction over 1 -multiply numerator and denominator by 10 for each decimal digit -simplify	$0.25 = 0.25/1$ $0.25/1 = 25/100$ $25/100 = 1/4$
Decimals to Percentages	x 100	$0.25 \times 100 = 25\%$
Percentages to Fractions	-write as a fraction over 100 -simplify	$25\% = 25/100$ $25/100 = 1/4$
Percentages to Decimals	÷ 100	$25\% \div 100 = 0.25$

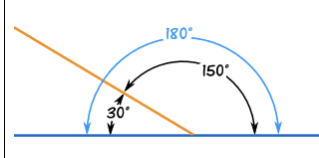
Common Conversions

1 cm =	10mm
1m =	100cm = 1000mm
1km =	1000m
1kg =	1000g
1l =	1000ml

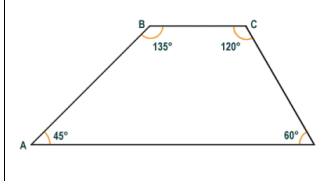
Angle Totals



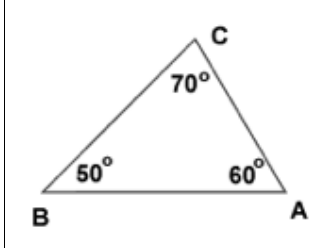
Angles around a point total 360°



Angles on a straight line total 180°



Angles in a quadrilateral total 360°



Angles in a triangle total 180°

Square Roots

$\sqrt{1}$	1
$\sqrt{4}$	2
$\sqrt{9}$	3
$\sqrt{16}$	4
$\sqrt{25}$	5
$\sqrt{36}$	6
$\sqrt{49}$	7
$\sqrt{64}$	8
$\sqrt{81}$	9
$\sqrt{100}$	10
$\sqrt{121}$	11
$\sqrt{144}$	12
$\sqrt{169}$	13

Square Numbers

1^2	1
2^2	4
3^2	9
4^2	16
5^2	25
6^2	36
7^2	49
8^2	64
9^2	81
10^2	100
11^2	121
12^2	144
13^2	169

Multiplication Tables

x	1	2	4	8	3	6	9	12	5	10	7	11
1	1	2	4	8	3	6	9	12	5	10	7	11
2	2	4	8	16	6	12	18	24	10	20	14	22
3	3	6	12	24	9	18	27	36	15	30	21	33
4	4	8	16	32	12	24	36	48	20	40	28	44
5	5	10	20	40	15	30	45	60	25	50	35	55
6	6	12	24	48	18	36	54	72	30	60	42	66
7	7	14	28	56	21	42	63	84	35	70	49	77
8	8	16	32	64	24	48	72	96	40	80	56	88
9	9	18	36	72	27	54	81	108	45	90	63	99
10	10	20	40	80	30	60	90	120	50	100	70	110
11	11	22	44	88	33	66	99	132	55	110	77	121
12	12	24	48	96	36	72	108	144	60	120	84	132

Key Formulae

Area of a rectangle	$b \times h$
Area of a triangle	$1/2 \times b \times h$
Area of a circle	$\pi \times r^2$

Cube Numbers

1^3	1
2^3	8
3^3	27
4^3	64
5^3	125

Cube Roots

$\sqrt[3]{1}$	1
$\sqrt[3]{8}$	2
$\sqrt[3]{27}$	3
$\sqrt[3]{64}$	4
$\sqrt[3]{125}$	5