

Knowledge Organiser- Maths Revision

Short Multiplication

$2543 \times 7 = 17801$

	2	5	4	3
x				7
1	7	8	0	1

Remember to move any regrouped digits into the next column. After the next multiplication, add the regrouped number to the answer.

Long Multiplication

$2543 \times 67 = 170381$

		2	5	4	3
x				6	7
1	7	8	0	1	
1	5	2	5	8	0
1	7	0	3	8	1

Before multiplying by the number in the tens column, remember to use zero as a placeholder because the 6 in 67 is 6 tens (60).

Multiplying and Dividing by 10, 100 and 1000

Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
3	8			

$\div 10$ and $\times 10$

Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
3	0	3	8	

$\div 100$ and $\times 100$

Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
3	0	0	3	8

$\div 1000$ and $\times 1000$

Subtract from a Mixed Number

$1\frac{2}{3} - \frac{2}{9} = 1\frac{6}{9} - \frac{2}{9} = 1\frac{4}{9}$

starting number	find the equivalent fraction	subtract

Division

$136 \div 4 = 34$

		3	4
4	1	3	6
-	1	2	0
		1	6
-		1	6
			0

30×4 and 4×4

Short Division

	3	8
4	1	5

$15 \div 4 = 3$ remainder 3

	4	5	5	r	3
5	2	2	7	2	8

$28 \div 5 = 5$ remainder 3

If your calculation has a remainder, remember to record it in the answer using the letter r.

Subtract Two Mixed Numbers

$2\frac{3}{4} - 1\frac{5}{8} = 1\frac{1}{8}$

$2 - 1 = 1$ and $\frac{3}{4} - \frac{5}{8} = \frac{1}{8}$

Factors

A factor is a number that divides into another number exactly, without leaving a remainder.

Factors of 20: 1, 2, 4, 5, 10, 20

The factor pairs are: 1 and 20, 2 and 10, 4 and 5

A common factor is a factor of 2 or more numbers.

Factors of 6: 1, 2, 3, 6

Factors of 15: 1, 3, 5, 15

Prime Numbers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Convert an Improper Fraction to a Mixed Number

$\frac{9}{4} = 2\frac{1}{4}$

$9 \div 4 = 2r1$

Divide the numerator by the denominator.

Convert a Mixed Number to an Improper Fraction

Multiply the whole by the denominator to make an improper fraction.

$2\frac{5}{6} = \frac{12}{6} + \frac{5}{6} = \frac{17}{6}$

Add the fractions together.

Adding and Subtracting Fractions

To add or subtract fractions with denominators that are multiples of the same number, we must change one fraction to have the same denominator.

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

$\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$

$\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$

$\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$

Add Mixed Numbers

$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1\frac{5}{8}$

$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$

whole \rightarrow $2\frac{1}{4}$ \leftarrow fraction

Converting

Decimal	Percentage	Fraction
0.5	50%	$\frac{1}{2}$
0.25	25%	$\frac{1}{4}$
0.75	75%	$\frac{3}{4}$
0.2	20%	$\frac{1}{5}$
0.1	10%	$\frac{1}{10}$
0.3	33.3%	$\frac{1}{3}$

Squared and Cubed Numbers

$2^2 = 4$	$2^3 = 8$	$5^2 = 25$	$5^3 = 125$
$2 \times 2 = 4$	$2 \times 2 \times 2 = 8$	$5 \times 5 = 25$	$5 \times 5 \times 5 = 125$