

Y8 Maths

Block 1-Number Sense

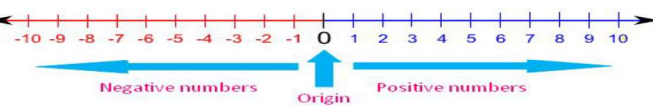
Addition and Subtraction Integer Rules

The rule gives the sign of the operation when 2 signs are next to each other

$++$	$+-$	$6+ -3 = 3$
$--$	$-+$	
Same Signs - POSITIVE	Different Signs - NEGATIVE	$6-3 = 3$
$++$	$+-$	$-10+2$
$--$	$-+$	$-10-2 = -12$
$++$	$+-$	$5-4$
$--$	$-+$	$5+4 = 9$

Multiplying and Dividing Integers Rules

Same Signs - POSITIVE	Different Signs - NEGATIVE	$7 \times -4 = -28$
$++$	$+-$	
$--$	$-+$	$-6 \times -4 = 24$
$++$	$+-$	$-35 \div 5 = -7$
$--$	$-+$	$-40 \div -8 = 5$



Positive Integers are whole numbers greater than zero

Negative Integers are whole numbers less than zero

$$\frac{\text{Numerator}}{\text{Denominator}} = \frac{1}{4}$$



Rounding to nearest 10 etc.

1) Identify the tens digit.

$$326 \quad \text{The tens digit is 2, or 20.}$$

2) Work out the next ten up.

$$326 \text{ is between } 320 \text{ and } 330$$

3) Decide if it stays or rounds up.
Use the units digit to decide. "5 or more rounds up", so 6 will round up to the next 10.

$$326 \rightarrow 330$$

Rounding to decimal places:

$$3.248 \quad 3.248 \rightarrow 3.2$$

1st dp
3.2

Look at the next digit.
4 stays down - stay at 3.2.

Rounding Numbers

Rounding Rules!
Find the number.
Look right next door.
5 or more?
Raise the score!
4 or less?
Let it rest!

Significant figures

If something is **significant**, it is big or important. The **most significant** thing is the biggest or most important thing.

3268

- 3 is worth the most in this number (3 thousand) It is the **first** significant figure.
- 2 is worth 2 hundred, and is the **second** significant figure.
- 6 is worth 6 tens, and is the **third** significant figure.
- 8 is worth 8 units, and is the **fourth** and least significant figure.

3268 rounded to 1 sig. fig.

$$3268 \rightarrow 3000$$

1 sf
3000

Look at the next digit.
2 is less than 5 - stay at 3000

3268 rounded to 2 sig. fig.

$$3268 \rightarrow 3300$$

2 sf
3200

Look at the next digit.
6 rounds up - go to 3300

All other digits become a zero as they are not significant!

Ordering Fractions

Example 1:

Find a common denominator (Try multiplying each fraction by the denominator of the other):

$$\begin{aligned} & \times 7 \frac{2}{5} ? \frac{4}{7} \times 5 \\ & \times 7 \frac{14}{35} ? \frac{20}{35} \end{aligned}$$

Example 2:

Convert all fractions into decimals

$$\begin{aligned} 2 \div 5 &= 0.4 \\ 5 \div 7 &= 0.57 \end{aligned}$$

Divide numerator by denominator

()	B Brackets
$2^{\sqrt{\quad}}$	I Indices
\div	D Division
\times	M Multiplication
$+$	A Addition
$-$	S Subtraction

Venn Diagrams

The **intersection** is where two sets overlap.

$A \cap B$
This means A and B.

AND rule

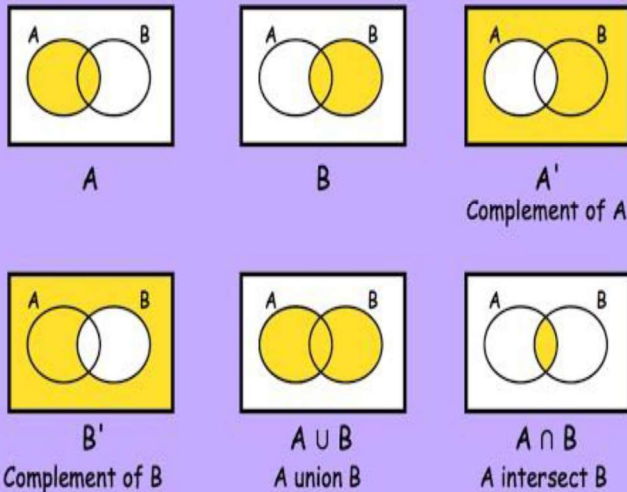
If you put two sets together, you get the **union**.

$A \cup B$
This means A or B.

OR rule

The **complement of A** is the region that is not A.

A'
This means not A.



Prime Factorisation

40

40 = 4 x 10

40 = 2 x 2 x 2 x 5

$40 = 2^3 \times 5$ in index form

- Write the number
- Write any pair of factors
- Continue until all the factors are prime
- Write the factors from smallest to largest

A **prime number** is a whole number that has only **two factors**: itself and 1.

For example, **7** is a prime number because it has only **two factors**: 7 and 1.

$$7 \div 7 = 1 \quad \text{and} \quad 7 \div 1 = 7$$

Prime Numbers

