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TOPIC 1: NUMBERS & THEIR OPERATIONS

PRIME NUMBERS

Prime Numbers refer to numbers greater than 1 that are only divisible by itself and 1.

List of common prime numbers between 1 and 20:

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

Prime Factorisation

2	140
2	70
5	35
7	7
	1

Start by dividing the number by the smallest prime factor and continue dividing till you get 1.

Therefore, $140 = 2^2 \times 5 \times 7$.

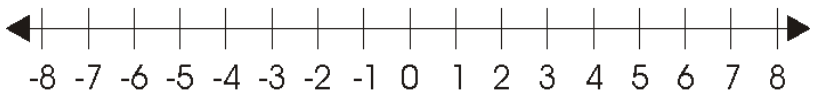
Highest Common Factor	**Lowest Common Multiple**
1. Apply Prime Factorisation Formula for all numbers until no more common factors are obtained. 2. Multiply only common factors together to get HCF.	1. Apply Prime Factorisation Formula for all numbers until no more common factors are obtained (same as HCF) 2. Multiply the common factors and the remaining numbers to get LCM.

Negative numbers are numbers below zero.
The sign (+) denotes addition/positive number while the sign (-) denotes subtraction/negative number.

Integers are whole numbers.
Integers are NOT expressed as fractions.
50 is an integer, 23 is not.

Rational numbers are numbers that can be expressed in the form of $\frac{a}{b}$ where and b are integers and b ≠ 0.
Irrational numbers are those that cannot be expressed as a ratio of two integers (eg. $\sqrt{5}$)

Real numbers are numbers that encompass all of the above.



Number lines are written such that the numbers *increase from left to right.*

USE OF <, >, ≤, ≥

<	>	≤	≥
Denotes 'less than'	Denotes 'more than'	Denotes 'equal to or less than'	Denotes 'equal to or more than'

APPROXIMATION & ESTIMATION

Rounding Off & Approximations

When rounding a number (eg. tens), observe the value of the number in the place to its right. If the value is <5, round down. If the value is >5, round up.

- Rounding 23579 to its nearest **tens** is 235**80**
- Rounding 23579 to its nearest **hundreds** is 23**600**

Approximations follow the same rule as rounding off

- 3.074 is approximately 3.07 (correct to 2d.p)

Significant Figures

The first significant figure of a number is the first **non-zero** number from the left.

- Eg. 1.25 has 3 significant figures

Zeroes between numbers *are* significant.

- Eg. 1.**00**5 has 4 significant figures

Zeroes at the end of the decimal (with nothing behind it) *are not* significant.

- Eg. 1.05**00** has 3 significant figures (last 2 00s are not counted)

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CHOONG HAN JUN

97839558
(Whatsapp)

@hanjunn
(telegram username)