

Definitions and Terminology

Real numbers: all numbers found on the number line, including whole numbers, negative numbers, fractions, decimals.

Whole numbers: start from 0, 1, 2, 3... and so on. It is the set of positive numbers and the number zero.

Prime Numbers: A number which has ONLY 2 factors, 1 and itself.

A number with more than 2 factors is a composite number.

Squares and square roots: $4 = 2 \times 2 \rightarrow 2$ is the positive square root of 4. i.e. $\sqrt{4} = 2$
 $9 = 3 \times 3 \rightarrow 3$ is the positive square root of 9. i.e. $\sqrt{9} = 3$

1, 4, 9, 16, 25...are known as perfect squares.

Cubes and cube roots: $8 = 2 \times 2 \times 2 \rightarrow 2$ is the cube root of 8. i.e. $\sqrt[3]{8} = 2$
 $27 = 3 \times 3 \times 3 \rightarrow 3$ is the cube root of 27. i.e. $\sqrt[3]{27} = 3$

1, 8, 27, 64, 125...are known as perfect cubes.

Rational and Irrational Numbers:

The following are **examples** of rational numbers:

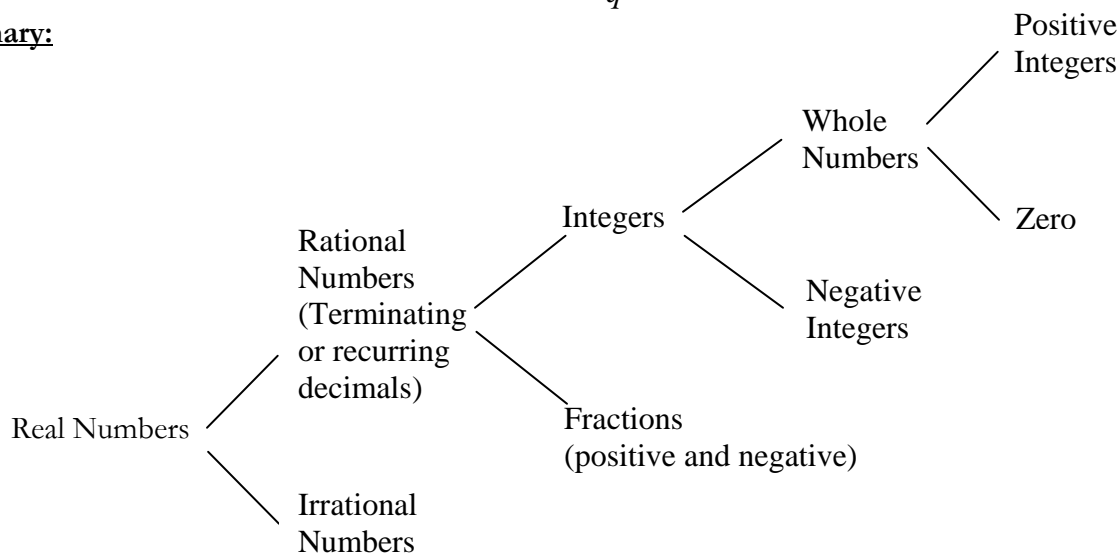
0	0.2	0.35	0.7824	$\sqrt{4}$	$\sqrt{9}$	
-5	-3	2	7	11	$-\frac{1}{3}$	$-\frac{2}{7}$
$\frac{1}{6}$	$\frac{1}{7}$	$\frac{3}{5}$	$\frac{23}{8}$	$1\frac{2}{3}$		

The following are **examples** of irrational numbers:

π $\sqrt{2}$ $\sqrt{3}$ $\sqrt{5}$ $\sqrt{7}$

In general, rational numbers can be expressed in the form $\frac{p}{q}$, where p and q are real numbers.

Summary:



Textbook Reading

In this reading, your aim is to understand the concept of “Difference of 2 Squares” and how to apply the concept in the factorisation of algebraic expressions.

(A) Concept Mastery

To recap, refer to the “green box” at the bottom of page 40. Take note of the words in red.

To familiarize yourself with the concept, study and understand example 9.

Read Pg 45, paying special attention to the items in the “green box”.

Skip example 11 and 12 for the time being – these will be covered later.

Study and understand examples 13 and 14 on pg 47.

Special Notes:

1. The difference of 2 squares method should only be applied to real numbers which are perfect squares.
2. In $a^2 - b^2 = (a + b)(a - b)$, a and b should be integers and not irrational numbers.

(B) Concept Application

Pg 42 example 10 and Pg 47 example 15 shows application of difference of 2 squares concept, as well as the other special product results in simplifying calculations. Study these carefully.

(C) Self Practice

Complete Ex. 2.2 Q3, Q4 and Ex. 2.3 Q3, Q4 in your exercise book. Check your solutions.

(D) ConcepTest 1

Attempt ConcepTest 1 in EMB. There are 3 questions, of which 1 is a feedback question. You **MUST** attempt the ConcepTest yourself to allow me to gauge how much you have understood of the topic.