Class 8
Important Formulas

Chapter 1- Rational Numbers

S.no	Type of Numbers	Description
1	Natural Numbers	N = {1,2,3,4,5……….} It is the counting numbers
2	Whole number	W= {0,1,2,3,4,5……..} It is the counting numbers + zero
3	Integers	Z={…-7,-6,-5,-4,-3,-2,-1,0,1,2,3,4,5,6…}
4	Positive integers	Z_+= {1,2,3,4,5……..}
5	Negative integers	Z_-={…-7,-6,-5,-4,-3,-2,-1}
6	Rational Number	A number is called rational if it can be expressed in the form p/q where p and q are integers (q> 0). Example: ½, 4/3 ,5/7 ,1 etc.

S.no	Terms	Descriptions
1	Additive Identity/Role of Zero	Zero is called the identity for the addition of rational numbers. It is the additive identity for integers and whole numbers as well a+0=a
2	Multiplicative identity/Role of one	1 is the multiplicative identity for rational numbers. It is the multiplicative identity for integers and whole numbers as well a×1=a
3	Reciprocal or	The multiplicative inverse of any rational number a/b is

multiplicative inverse	defined as b/a so that (a/b) x (b/a) =1
	Zero does not have any reciprocal or multiplicative inverse

Properties of Rational Numbers

Closure Property

Numbers	Closed Under			
	addition	subtraction	multiplication	division
Rational numbers	Yes	Yes	Yes	No
Integers	Yes	Yes	Yes	No
Whole Numbers	Yes	No	Yes	No
Natural Numbers	Yes	No	Yes	No

Commutativity Property

Numbers	Commutative Under			
	addition	subtraction	multiplication	division
Rational numbers	Yes	No	Yes	No
Integers	Yes	No	Yes	No
Whole Numbers	Yes	No	Yes	No
Natural Numbers	Yes	No	Yes	No

Associativity Property

Numbers	Associative Under			
	addition	subtraction	multiplication	division
Rational numbers	Yes	No	Yes	No
Integers	Yes	No	Yes	No
Whole Numbers	Yes	No	Yes	No
Natural Numbers	Yes	No	Yes	No