

DISTRICT PUBLIC SCHOOL & COLLEGE, KASUR



Established Since 1988

Class

7th

Subject

Mathematics

Term

1st

Prepared by

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DEFINITIONS

CLASS : 7TH

SET :

A set is a collection of well- defined or distinct objects.

MEMBERS OR ELEMENTS OF SET :

The objects in a set are called members or elements of set.

VENN DIAGRAM :

A Venn diagram is a pictorial representation of a set.

DESCRIPTIVE FORM :

In descriptive form, the set is described by a statement and is not placed within curly brackets { }.

TABULAR FORM :

In tabular form, all the elements of the set are listed within curly brackets and separated by commas.

SET-BUILDER FORM :

In set builder form, the set is expressed in the form of a rule.

FINITE SET :

If a set contains a finite or limited number of elements, then it is called finite set.

INFINITE SET:

If a set contains an infinite or unlimited number of elements , then it is called infinite set.

EMPTY SET :

An empty set is a set that contains no element.

Empty set is also called null set or void set.

DISJOINT SET:

Two or more sets are called disjoint sets if they have no common elements

OVERLAPPING SET:

Two or more sets are called overlapping sets if they have at least one common element.

EQUIVALENT SET:

Two or more sets are said to be equivalent sets, if they have an equal number of elements. it is not necessary for them to have the same elements.

EQUAL SET:

Two or more sets are said to be equal sets if they contain the same elements.

UNIVERSAL SET:

A universal set is a set which contains all the sets under consideration.

SUBSET:

If each element of a set a is also an element of another set b , then the set a is called the subset of the set b . the symbol \subseteq is used to denote a subset.

PROPER SUBSET:

If every element of a is also an element of b and at least one element of b is not an element of a , then a is a proper subset of b . the symbol \subset is used to denote for proper subset.

IMPROPER SUBSET :

A subset that contains every element of the set a is called the improper subset of a . the improper subset and original set are equal as they contain the same elements.

SUPER SET:

A super set is a set that contain all the elements of a smaller set.

POWER SET :

A powerset is a set that contains all the subsets that can be possibly created from an original set.

CARDINAL NUMBER :

The number of elements of a set is called its cardinal number.

UNION OF SETS :

A set containing all the elements of A and B is called the union of set A and set B .

INTERSECTION OF SETS :

A set containing the common elements of A and B is called the intersection set of set A and set B .

DIFFERENCE OF SETS :

The difference set of any two sets A and B is the set of the elements of set A which are not in set B .

COMPLEMENT OF A SET :

If a set A is a subset of a given universal set, then the set of elements not in A is called its complement set.

COMMUTATIVE PROPERTY OF UNION OF SETS :

Changing the places of sets in the union operation gives the same union set. This is called the commutative property of union of sets.

COMMUTATIVE PROPERTY OF INTERSECTION OF SETS :

Changing the places of sets in the intersection operation gives the same union set. This is called the commutative property of intersection of sets.

ASSOCIATIVE PROPERTY OF UNION OF SETS :

Grouping the sets differently gives the same union set. This is called the associative property of union of sets.

ASSOCIATIVE PROPERTY OF INTERSECTION OF SETS :

Grouping the sets differently gives the same intersection set. This is called the associative property of intersection of sets.

RATIONAL NUMBER :

A number which can be represented in the form of $\frac{p}{q}$ (where p and q are integers and q is not equal to 0) is a rational number. Or

Rational numbers (Q) are numbers that include integers and fractions.

ADDITIVE IDENTITY :

The sum of a rational number and its additive inverse is called the additive identity.

MULTIPLICATIVE IDENTITY :

The product of rational number and its multiplicative inverse is called the multiplicative identity.

ADDITIVE INVERSE :

The sum of two numbers whose sum is zero are called additive inverse of each other.

MULTIPLICATIVE INVERSE :

The product of two numbers whose product is one is called multiplicative inverse of each other.

COMMUTATIVE PROPERTY WITH RESPECT TO ADDITION :

$$A + B = B + A \quad (A, B \in \mathbb{Q})$$

By adding two rational numbers we get the same result . this is called commutative property with respect to addition.

COMMUTATIVE PROPERTY WITH RESPECT TO MULTIPLICATION :

$$A \times B = B \times A \quad (A, B \in \mathbb{Q})$$

By multiplying two rational numbers we get the same result . this is called commutative property with respect to multiplication.

ASSOCIATIVE PROPERTY WITH RESPECT TO ADDITION :

$$A + (B + C) = (A + B) + C \quad (A, B, C \in \mathbb{Q})$$

By adding these rational numbers in different combinations gives the same result. This is called associative property of addition.

ASSOCIATIVE PROPERTY WITH RESPECT TO MULTIPLICATION :

$$A \times (B \times C) = (A \times B) \times C \quad (A, B, C \in \mathbb{Q})$$

By multiplying these rational numbers in different combinations gives the same result. This is called associative property of multiplication

DISTRIBUTIVE PROPERTY OF MULTIPLICATION OVER ADDITION:

If $A, B, C \in \mathbb{Q}$ then

$$A \times (B + C) = (A \times B) + (A \times C)$$

Is called distributive property of multiplication over addition.

DISTRIBUTIVE PROPERTY OF MULTIPLICATION OVER SUBTRACTION :

If $A, B, C \in \mathbb{Q}$ then

$$A \times (B - C) = (A \times B) - (A \times C)$$

Is called distributive property of multiplication over subtraction.

RATIO :

A ratio is a relation which one quantity bears to another quantity of the same kind with regard to their magnitudes.

OR

A comparison between two same quantities is called ratio.

PROPORTION :

The sign of equality between two ratios is called proportion.

DIRECT PROPORTION :

In direct proportion, an increase in one quantity leads to a similar increase in the other quantity. similarly, when one quantity decreases it leads to a decrease in the other quantity.

INVERSE PROPORTION :

In direct proportion, an increase in one quantity leads to a similar decrease in the other quantity. similarly, when one quantity decreases it leads to a increase in the other quantity.

CONTINUED RATIO :

In a continued ratio, the relationship between two ratios $a : b$ and $b : c$ is expressed in the form of $a : b : c$. this is called continued ratio.

SPEED :

Speed Is the distance covered within a unit time.

VARIABLE :

A variable is an unknown number, represented by a letter.

COEFFICIENT :

A number that is placed before the variable is called the coefficient.

CONSTANT :

A constant is a symbol with a fixed numerical value.

Algebraic expression:

An algebraic expression consists of a single term or terms connected by operations of addition and subtraction.

ALGEBRAIC TERM :

An algebraic term is either a numeral, a variable, or a product of a numeral and one or more variables.

POLYNOMIALS :

A polynomial is an algebraic expression consisting of one or more terms, in each of which the exponent of the variable is zero or a positive integer.

MONOMIAL :

A monomial is a polynomial consisting of a single term

BINOMIAL :

A binomial is a polynomial consisting of two terms.

TRINOMIAL :

A trinomial is a polynomial consisting of three terms.

LIKE TERMS :

Terms containing the same variables and the same corresponding exponents are known as like terms.

UNLIKE TERMS :

Terms having different variables or the same variables but different corresponding exponents are called unlike terms.

OBJECTIVE FIRST TERM

MULTIPLE CHOICE QUESTION

CHAPTER NO : 1

- 1 IF $A = \{ a, t, e \}$ then $n(A) =$ -----
 (a) 1 (b) 2 (c) 3 (d) 4
- 2 If $A = \{ 1, 2, 3, \dots, 100 \}$ and $B = \{ 2, 4, 6, 8, \dots, 100 \}$ then $A - B$ is
 (a) $\{ 1, 3, 5, 7, \dots, 99 \}$ (b) $\{ 2, 4, 6, 8, \dots, 100 \}$ (c) $\{ 1, 2, 3, \dots, 100 \}$ (d) $\{ \}$
- 3 If $D = \{ x : x \text{ is letter in the word SLEEVES } \}$, then $n(D) =$ -----
 (a) 7 (b) 6 (c) 5 (d) 4
- 4 $\{ 0 \}$ is a ----- set.
 (a) Null (b) Zero (c) Unit (d) Void
- 5 The rectangular region in a Venn diagram represents
 (a) U (b) $A \cup B$ (c) $A \cap B$ (d) $A - B$
- 6 The commutative property of intersection is
 (a) $A \cup B = B \cup A$ (b) $A \cap B = B \cap A$ (c) $A \cap C = C \cap B$ (d) $C \cap B = B \cup A$
- 7 The compliment of set B is determined as
 (a) $A - B$ (b) $A \cup B$ (c) $U \cap B$ (d) $U \setminus B$
- 8 Number of elements in a set is called its
 (a) Universal set (b) Empty set (c) Cardinal number (d) unit set
- 9 ----- is a group of distinct and well-defined object.
 (a) data (b) set (c) Groups (d) Objects
- 10 Disjoint sets have no common -----
 (a) Sets (b) Subset (c) Proper subsets (d) Elements
- 11 Equal sets have -----
 (a) Same element (b) Not same element (c) empty (d) none of these
- 12 $A \setminus B$ shows the ----- of the sets
 (a) Difference (b) Union (c) Intersection (d) Compliment
- 13 A ----- set only includes common elements.
 (a) Difference (b) Intersection (c) Union (d) Empty
- 14 Commutative property of union of set is
 (a) $A \cup B = B \cup A$ (b) $A \cap B = B \cup A$ (c) $A \cup B = B \cup C$ (d) none of these
- 15 Associative property of intersection of set is
 (a) $A \cap B = A \cap (B \cap C)$ (b) $(A \cap B) \cap C = A \cap (B \cap C)$ (c) $A \cap B \cap C$ (d) $(A \cup B) \cup C = A \cup (B \cup C)$
- 16 An example of empty set is
 (a) Smallest even no (b) Integer $b \setminus w$ 5 & 6 (c) smallest natural no (d) whole no $b \setminus w$ 9 & 11
- 17 Sets which have at least one common elements are called -----sets
 (a) Difference (b) Overlapping (c) Subsets (d) Universal
- 18 A set which contains all the sets under discussion is called
 (a) Difference of sets (b) Subsets (c) Union of sets (d) Universal set
- 19 A set which contains all the elements of smaller set is called.
 (a) Unit set (b) Empty set (c) Subset (d) Super set
- 20 ----- is the subset of every set.
 (a) Unit set (b) Empty set (c) Subset (d) Universal set

MULTIPLE CHOICE QUESTIONS

UNIT : 2

- 1 Rational number are numbers that include
 (a) integer and fraction (b) integers and irrational numbers
 (c) integers and odd numbers (d) Rational and Irrational numbers
- 2 The additive inverse of $\frac{1}{5}$ is?
 (a) $-\frac{1}{5}$ (b) 5 (c) -5 (d) 1
- 3 When 'a' is added to its inverse the result is
 (a) 1 (b) 2 (c) 0 (d) no one
- 4 The reciprocal of $\frac{2}{-3} \times \frac{6}{-7}$ is
 (a) $\frac{7}{4}$ (b) $\frac{7}{3}$ (c) $\frac{4}{7}$ (d) $\frac{-4}{7}$
- 5 The reciprocal of a rational number is
 (a) multiplicative inverse (b) additive inverse (c) multiplicative identity (d) additive identity
- 6 ----- is called the multiplicative identity of rational number.
 (a) 1 (b) 2 (c) 0 (d) -1
- 7 the standard form of $\frac{-21}{-35}$
 (a) $\frac{-3}{5}$ (b) $\frac{3}{5}$ (c) $\frac{21}{35}$ (d) $\frac{35}{21}$
- 8 ----- is called additive identity of rational number?
 (a) 0 (b) 1 (c) -1 (d) no one
- 9 $\frac{-4}{13} \div \frac{-12}{52} = ?$
 (a) $\frac{5}{3}$ (b) $\frac{4}{3}$ (c) $\frac{3}{4}$ (d) $\frac{1}{4}$
- 10 which is greater $\frac{-4}{9}$ or $\frac{-10}{3}$
 (a) $\frac{-10}{3}$ (b) $\frac{-4}{9}$ (c) both are equal (d) no one
- 11 if a, b \in Q then commutative property w.r.t addition is?
 (a) $a + b = b + a$ (b) $(ab)c = a(bc)$ (c) $a + (b + c) = (a + b) + c$ (d) no one
- 12 numbers ----- to the right on the number line.
 (a) decrease (b) increase (c) remain same (d) no one
- 13 $\left(\frac{21}{15}\right) \times \left(\frac{-5}{7}\right)$ is equal to
 (a) -3 (b) 1 (c) -1 (d) -5
- 14 If a, b, c \in Q then Associative property w.r.t. multiplication is
 (a) $a + b = b + a$ (b) $ab = ba$ (c) $a(b + c) = ab + ac$ (d) $(ab)c = a(bc)$
- 15 which of the following is irrational number?
 (a) 0 (b) π (c) $\frac{5}{7}$ (d) 15

Decimal numbers

Multiple choice questions.

Unit#03

- 1 0.2 – 0.02 is equal to
 (a) 1.8 (b) 1.08 (c) 0.018 (d) 0.18
- 2 4.8 + 12.2 + 0.2 + 42 is equal to
 (a) 48.4 (b) 52.2 (c) 54.2 (d) 59.2
- 3 which decimal number below is as same as $\frac{21}{28}$
 (a) 0.45 (b) 0.54 (c) 0.75 (d) 0.80
- 4 what number should be multiplied to itself to get 0.36
 (a) 0.6 (b) 0.06 (c) 0.03 (d) 0.09
- 5 What is the value of 'a' if $\frac{a}{1.2} = \frac{6}{2.4}$
 (a) 2 (b) 3 (c) 4 (d) 8
- 6 1.2735 round to tenth is
 (a) 1.3 (b) 1.28 (c) 1.2 (d) 1
- 7 Round off 0.005383976 up to three decimal place
 (a) 0.00538 B) 0.005 C) 0.00976 D) 0.538
- 8 How many times 0.2 is equal to 0.02?
 (a) 0.1 B) 10 C) 0.01 D) 0.5
- 9 Which of the following fractions is equal to 0.375?
 (a) $\frac{3}{4}$ B) $\frac{3}{8}$ C) $\frac{4}{9}$ D) $\frac{1}{5}$
- 10 If A= 4.8 and B = 0.2 then which of the following has the biggest value?
 A) A + B B) A x B C) $\frac{A}{B}$ D) A – B
- 11 What is 35.6 rounded off to the nearest whole number.
 (a) 35 (b) 36 (c) 34 (d) 37
- 12 which of these gives a terminating decimal?
 (a) $\frac{1}{9}$ (b) $\frac{4}{15}$ (c) $\frac{5}{10}$ (d) $\frac{8}{9}$
- 13 which of these is a recurring decimal?
 (a) 2.474,747.... (b) 1.315,478.... (c) 0.124,025.... (d) 1.155,254....
- 14 71.985,6 rounded off to three decimal places is
 (a) 71.987 (b) 71.986 (c) 71.99 (d) 71.985
- 15 When is the long division method used?
 (a) to convert decimal numbers to fractions (b) to convert percentages to decimal numbers
 (c) to convert decimal numbers to percentages (d) to convert fractions to decimal numbers
- 16 decimals are fractions with denominators as
 (a) power of 2 (b) powers of any even number (c) powers of 5 (d) powers of 10
- 17 $\frac{15}{8}$ is same as
 (a) 18.75 (b) 1.875 (c) 187.5 (d) 0.1875
- 18 0.8 written as a vulgar fraction is
 (a) $\frac{8}{10}$ (b) $\frac{8}{9}$ (c) $\frac{9}{8}$ (d) $\frac{10}{8}$
- 19 What must be added to the sum of 4.15 and 66.009 to get 100?
 (a) 34.009 (b) 70.159 (c) 29.841 (d) 28.814
- 20 find the product of 2.33 and 5.66 correct to 3 decimal places.

- Unit#08
- (a) 13.188 (b) 13.187 (c) 131.188 (d) 131.187
ALGEBRAIC EXPRESSIONS
- 1 A ----- is a polynomial consisting of two terms.
(a) Monomial (b) Binomial (c) Trinomial (d) no one
 - 2 In $2x^2 + y + 3z$, x, y, z are called?
(a) constant (b) operators (c) variables (d) co-efficient
 - 3 A number that is placed before a variable is called?
(a) constant (b) co-efficient (c) variables (d) terms
 - 4 $a \times (b + c) = \text{-----?}$
(a) $(a \times b) + (a \times c)$ (b) $(a \times b) + c$ (c) $a \times b \times c$ (d) $a + (b \times c)$
 - 5 $(z^4)^{-3}$ is equal to
(a) z^{12} (b) z^{-12} (c) z^{-64} (d) z^{-43}
 - 6 $(12x^2y - 6xy) \div 2xy = ?$
(a) $6x^2y - 3xy$ (b) $3xy$ (c) $6x - 3$ (d) no one
 - 7 $ax^0 + bx^0y = ?$
(a) $abxy$ (b) $a + bx^0y$ (c) $a + by$ (d) $ay + b$
 - 8 $(x^5)^2 \div (x^3)^2$ is equal to
(a) x^{16} (b) x^{60} (c) x^6 (d) x^4
 - 9 the sum of $2a + 3b - 7c$ and $5a + 9b + c$ is
(a) $7a + 12b - 6c$ (b) $-3a - 6b - 6c$ (c) $7a + 12b + 6c$ (d) $12a + 6b + 7c$
 - 10 $2x, xy, 3x^2y$ are called algebraic -----?
(a) terms (b) constants (c) equations (d) algebra
 - 11 $(-a) \times (-b) = ?$
(a) $-ab$ (b) $+ab$ (c) $-ba$ (d) both a & c
 - 12 the degree of expression $x^5 + 2x^2y^2 + 3y^4$ is
(a) 4 (b) 2 (c) 6 (d) 5
 - 13 the product of two terms with unlike sign is -----.
(a) positive (b) negative (c) both (d) no one
 - 14 $(5b)^4 = \text{-----}$
(a) $625b$ (b) $20b^4$ (c) $625b^4$ (d) $45b$
 - 15 ----- is a symbol with fixed numerical value.
(a) variable (b) constant (c) coefficient (d) term

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HOME TASK FOR CLASS 7TH

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DARE TO LEAD 1st

Prepared by

Established since 1968

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WORK SHEET UNIT#01

Q#01: Tick the right answer.

- 1 The commutative property of intersection is
(a) $A \cup B = B \cup A$ (b) $A \cap B = B \cap A$ (c) $A \cap C = C \cap B$ (d) $C \cap B = B \cup A$
- 2 A ----- set only includes common elements.
(a) Difference (b) Intersection (c) Union (d) Empty
- 3 If $A = \{1, 2, 3, \dots, 100\}$ and $B = \{2, 4, 6, 8, \dots, 100\}$ then $A - B$ is
(a) $\{1, 3, 5, 7, \dots, 99\}$ (b) $\{2, 4, 6, 8, \dots, 100\}$ (c) $\{1, 2, 3, \dots, 100\}$ (d) $\{ \}$
- 4 _____ is the subset of every set.
(a) Unit set (b) Empty set (c) Subset (d) Universal set
- 5 An example of empty set is
(a) Smallest even no (b) Integer b\w 5 & 6 (c) smallest natural no (d) whole no b\w 9 & 11
- 6 Number of elements in a set is called its
(a) Universal set (b) Empty set (c) Cardinal number (d) unit set
- 7 If $D = \{x : x \text{ is letter in the word SLEEVES} \}$, then $n(D) = \text{-----}$
(a) 7 (b) 6 (c) 5 (d) 4
- 8 A ----- set only includes common elements.
(a) Difference (b) Intersection (c) Union (d) Empty
- 9 A set which contains all the sets under discussion is called
(a) Difference of sets (b) Subsets (c) Union of sets (d) Universal set
- 10 Commutative property of union of set is
(a) $A \cup B = B \cup A$ (b) $A \cap B = B \cup A$ (c) $A \cup B = B \cup C$ (d) none of these
- 11 ----- is a group of distinct and well-defined object.
(a) data (b) set (c) Groups (d) Objects
- 12 IF $A = \{a, t, e \}$ then $n(A) = \text{-----}$
(a) 1 (b) 2 (c) 3 (d) 4
- 13 If $A = \{1, 2, 3, \dots, 100\}$ and $B = \{2, 4, 6, 8, \dots, 100\}$, what is $A - B$?
(a) $\{1, 2, 3, 4, \dots, 100\}$ (b) $\{1, 3, 5, \dots, 99\}$ (c) $\{2, 4, 6, \dots, 100\}$ (d) no one
- 14 How is the complement of a set A determined?

- (a) $A - B$ (b) U/A (c) A/U (d) no one
- 15 What does the rectangular region in a Venn Diagram represent?
 (a) $A \cup B$ (b) U (c) A (d) B
- 16 Which of these represents the commutative property of union of sets.
 (a) $A \cup B = B \cup A$ (b) $A \cap B = B \cap A$ (c) $A \cup B = B \cap A$ (d) all of these

Q#02: Define the followings:

Set:

Universal set:

Union of sets:

Compliment of a set:

Equivalent set:

Singleton set:

Q#03: list the different types of sets.

Set of natural

number: _____

Set of whole

number: _____

Set of integers:

Set of prime numbrs:

Set of even numbers:

Set of odd numbers:

Q#04: write the commutative and associative property of intersection of sets.

Commutative property of intersection of sets:

Associative property of intersections of sets .

Write the formula of A' .

Write the symbol of union and intersection.

Q#05: Solve the following questions.

1 if $A=\{1,2,3,4,5\}$ and $B= \{2,3,4,6\}$ find $A\cup B$ and $A\cap B$.

2 prove the commutative property of intersection if $U = \{1,2,3,\dots,10\}$, $A = \{2,4,6,8\}$ and $B=\{1,3,5,7,9\}$

3 write the cardinality of alphabets.

4 If $U = \{0,1,2,3,\dots, 10\}$ and $A = \{2,4,6,10\}$ find A' .

5 if $A = \{a,b,c,d, \dots .. z\}$ and $B = \{a,e,l,o,u\}$ then prove the commutative property of intersection.

6 If $U = \{0,1,2,3,\dots, 9\}$ and $A = \{0,2,4,6,8\}$ and $B = \{1,3,5,7,9\}$ then find $A \cup B$, $A \cap B$, A/B and B' .

7 find the universal set if $A = \{1,3,5,7,9\}$ and $A' = \{4,5,6,7,12\}$.

8 If $A = \{3,6,9,12,15\}$, $B = \{4,8,12,16,20\}$ and $C = \{5,10,15,20\}$ then prove the associative property of intersection of sets.

- 1 if $a, b \in \mathbb{Q}$ then commutative property w.r.t addition is?
 (a) $a + b = b + a$ (b) $(ab)c = a(bc)$ (c) $a + (b + c) = (a + b) + c$ (d) no one
- 2 the standard form of $\frac{-21}{-35}$
 (a) $\frac{-3}{5}$ (b) $\frac{3}{5}$ (c) $\frac{21}{35}$ (d) $\frac{35}{21}$
- 3 The additive inverse of $\frac{1}{5}$ is?
 (a) $-\frac{1}{5}$ (b) 5 (c) -5 (d) 1
- 4 If $a, b, c \in \mathbb{Q}$ then Associative property w.r.t. multiplication is
 (a) $a + b = b + a$ (b) $ab = ba$ (c) $a(b + c) = ab + ac$ (d) $(ab)c = a(bc)$
- 5 which is greater $\frac{-4}{9}$ or $\frac{-10}{3}$
 (a) $\frac{-10}{3}$ (b) $\frac{-4}{9}$ (c) both are equal (d) no one
- 6 which of the following is irrational number?
 (a) 0 (b) π (c) $\frac{5}{7}$ (d) 15
- 7 The reciprocal of $\frac{2}{-3} \times \frac{6}{-7}$ is
 (a) $\frac{7}{4}$ (b) $\frac{7}{3}$ (c) $\frac{4}{7}$ (d) $\frac{-4}{7}$
- 8 $\frac{-4}{13} \div \frac{-12}{52} = ?$
 (a) $\frac{5}{3}$ (b) $\frac{4}{3}$ (c) $\frac{3}{4}$ (d) $\frac{1}{4}$
- 9 $\left(\frac{21}{15}\right) \times \left(\frac{-5}{7}\right)$ is equal to
 (a) -3 (b) 1 (c) -1 (d) -5
- 10 ----- is called the multiplicative identity of rational number.
 (a) 1 (b) 2 (c) 0 (d) -1
- 11 numbers ----- to the right on the number line.
 (a) decrease (b) increase (c) remain same (d) no one
- 12 Rational number are numbers that include
 (a) integer and fraction (b) integers and irrational numbers
 (c) integers and odd numbers (d) Rational and Irrational numbers
- 13 The reciprocal of a rational number is
 (a) multiplicative inverse (b) additive inverse (c) multiplicative identity (d) additive identity
- 14 ----- is called additive identity of rational number?
 (a) 0 (b) 1 (c) -1 (d) no one
- 15 When 'a' is added to its inverse the result is
 (a) 1 (b) 2 (c) 0 (d) no one
- 16 which number gives $\frac{-2}{5}$ when add to $\frac{4}{7}$?
 (a) $\frac{-34}{35}$ (b) $\frac{-3}{2}$ (c) $\frac{-35}{7}$ (d) $\frac{2}{35}$
- 17 which of these is not a subset of rational number?
 (a) whole number (b) natural number (c) integer (d) irrational number
- 18 which of the following is the ascending order of numbers $\frac{3}{2}, \frac{-1}{2}, 0, \frac{5}{2}$?

- (a) $0, \frac{3}{2}, \frac{-1}{2}, \frac{5}{2}$ (b) $\frac{3}{2}, \frac{5}{2}, \frac{-1}{2}, 0$ (c) $\frac{-1}{2}, 0, \frac{3}{2}, \frac{5}{2}$ (d) $\frac{5}{2}, 0, \frac{-1}{2}, \frac{3}{2}$

- 19 which property is represented by the following: $a - b \neq b - a$
 (a) Commutative property of addition (b) additive identity
 (c) Commutative property of subtraction (d) multiplicative inverse
- 20 which of the following fractions is greater than $\frac{5}{7}$?
 (a) $\frac{5}{2}$ (b) $\frac{8}{9}$ (c) $\frac{22}{33}$ (d) no one

Q#02: define the following:

Rational Number:

Additive Identity:

Multiplicative Identity:

Q#03: Solve the following questions.

- 1 write down the rational number whose numerator is $15 - 4$ and whose denominator is $37 \times (-2)$.

- 2 Write the following rational number into standard form $\frac{-21}{-28}$

3 Arrange the following rational numbers in descending order. $\frac{2}{5}, \frac{8}{-15}, \frac{-1}{2}, \frac{-3}{-10}$

4 Find the reciprocal of $\frac{2}{-3} \times \frac{4}{-5}$

5 Simplify $\frac{3}{7} + \frac{5}{9} - \frac{2}{3}$

6 Simplify $\left(-\frac{8}{5} \times \frac{3}{4}\right) + \left(\frac{7}{8} \times \frac{-16}{25}\right)$

7 Simplify $-4 \div \left(-\frac{2}{5}\right)$

8 Find the value of $\frac{7}{24} - \frac{11}{36}$

9 Show that $\left(-\frac{2}{5} + \frac{4}{9}\right) + \left(-\frac{3}{4}\right) = -\frac{2}{5} + \left(\frac{4}{9} + \left(-\frac{3}{4}\right)\right)$

10 Show that $-\frac{2}{3}\left(\frac{4}{5} + \frac{-8}{15}\right) = \left(-\frac{2}{3} \times \frac{4}{5}\right) + \left(-\frac{2}{3} \times \frac{-8}{15}\right)$

Worksheet #03

Q#01: Tick the right answer.

- 1 which of these gives a terminating decimal?
 (a) $\frac{1}{9}$ (b) $\frac{4}{15}$ (c) $\frac{5}{10}$ (d) $\frac{8}{9}$
- 2 what number should be multiplied to itself to get 0.36
 (a) 0.6 (b) 0.06 (c) 0.03 (d) 0.09
- 3 0.8 written as a vulgar fraction is
 (a) $\frac{8}{10}$ (b) $\frac{8}{9}$ (c) $\frac{9}{8}$ (d) $\frac{10}{8}$
- 4 $0.2 - 0.02$ is equal to
 (a) 1.8 (b) 1.08 (c) 0.018 (d) 0.18
- 5 71.985,6 rounded off to three decimal places is
 (a) 71.987 (b) 71.986 (c) 71.99 (d) 71.985
- 6 $\frac{15}{8}$ is same as
 (a) 18.75 (b) 1.875 (c) 187.5 (d) 0.1875
- 7 Round off 0.005383976 up to three decimal place
 (a) 0.00538 B) 0.005 C) 0.00976 D) 0.538
- 8 What is 35.6 rounded off to the nearest whole number.
 (a) 35 (b) 36 (c) 34 (d) 37
- 9 find the product of 2.33 and 5.66 correct to 3 decimal places.
 (a) 13.188 (b) 13.187 (c) 131.188 (d) 131.187
- 10 which decimal number below is as same as $\frac{21}{28}$
 (a) 0.45 (b) 0.54 (c) 0.75 (d) 0.80
- 11 which of these is a recurring decimal?
 (a) 2.474,747.... (b) 1.315,478.... (c) 0.124,025.... (d) 1.155,254....
- 12 When is the long division method used?
 (a) to convert decimal numbers to fractions (b) to convert percentages to decimal numbers

- (c) to convert decimal numbers to percentages (d) to convert fractions to decimal numbers
- 13 What must be added to the sum of 4.15 and 66.009 to get 100?
 (a) 34.009 (b) 70.159 (c) 29.841 (d) 28.814
- 14 If $A = 4.8$ and $B = 0.2$ then which of the following has the biggest value?
 A) $A + B$ B) $A \times B$ C) $\frac{A}{B}$ D) $A - B$
- 15 decimals are fractions with denominators as
 (a) power of 2 (b) powers of any even number (c) powers of 5 (d) powers of 10
- 16 1.2735 round to tenth is
 (a) 1.3 (b) 1.28 (c) 1.2 (d) 1
- 17 What is the value of 'a' if $\frac{a}{1.2} = \frac{6}{2.4}$
 (a) 2 (b) 3 (c) 4 (d) 8
- 18 Which of the following fractions is equal to 0.375?
 (a) $\frac{3}{4}$ B) $\frac{3}{8}$ C) $\frac{4}{9}$ D) $\frac{1}{5}$
- 19 How many times 0.2 is equal to 0.02?
 (a) 0.1 B) 10 C) 0.01 D) 0.5
- 20 $4.8 + 12.2 + 0.2 + 42$ is equal to
 (a) 48.4 (b) 52.2 (c) 54.2 (d) 59.2

Q#02: define the followings:

Decimal Number:

Terminating decimal number:

Non-terminating decimal number:

Recurring decimal number:

Question#03: Attempt the following questions.

- 1 Round off the underline digit
210.53

112.999

416.595

- 2 Convert the decimal into fracation.
 $\frac{0.\underline{8}26}{1.2144}$
0.012

5.04

$\frac{0.0099}{4.95}$

0.009,5

3 prove that $\frac{2}{7}$ is a recurring fraction.

4 Henry had a piece of cloth measuring 674.95cm. he cut off a 217.43cm long piece from it. What length of cloth remains? Round off the answer to one decimal place.

5 express $10\frac{311}{495}$ as a recurring decimal.

6 find the decimal value of the following fractions

$$4\frac{1}{6}$$

$$1\frac{41}{185}$$

Work sheet #04

Tick the right answer.

Shuffle multiple choice question unit#08

1 $a \times (b + c) = \text{-----?}$

(a) $(a \times b) + (a \times c)$

(b) $(a \times b) + c$

(c) $a \times b \times c$

(d) $a + (b \times c)$

- 2 $ax^0 + bx^0y = ?$
 (a) $abxy$ (b) $a + bx^0y$ (c) $a + by$ (d) $ay + b$
- 3 the product of two terms with unlike sign is -----.
 (a) positive (b) negative (c) both (d) no one
- 4 $2x, xy, 3x^2y$ are called algebraic -----?
 (a) terms (b) constants (c) equations (d) algebra
- 5 $(x^5)^2 \div (x^3)^2$ is equal to
 (a) x^{16} (b) x^{60} (c) x^6 (d) x^4
- 6 A ----- is a polynomial consisting of two terms.
 (a) Monomial (b) Binomial (c) Trinomial (d) no one
- 7 $(-a) \times (-b) = ?$
 (a) $-ab$ (b) $+ab$ (c) $-ba$ (d) both a & c
- 8 $(z^4)^{-3}$ is equal to
 (a) z^{12} (b) z^{-12} (c) z^{-64} (d) z^{-43}
- 9 In $2x^2 + y + 3z$, x, y, z are called?
 (a) constant (b) operators (c) variables (d) co-efficient
- 10 $(5b)^4 = \text{-----}$
 (a) $625b$ (b) $20b^4$ (c) $625b^4$ (d) $45b$
- 11 the sum of $2a + 3b - 7c$ and $5a + 9b + c$ is
 (a) $7a + 12b - 6c$ (b) $-3a - 6b - 6c$ (c) $7a + 12b + 6c$ (d) $12a + 6b + 7c$
- 12 A number that is placed before a variable is called?
 (a) constant (b) co-efficient (c) variables (d) terms
- 13 ----- is a symbol with fixed numerical value.
 (a) variable (b) constant (c) coefficient (d) term
- 14 $(12x^2y - 6xy) \div 2xy = ?$
 (a) $6x^2y - 3xy$ (b) $3xy$ (c) $6x - 3$ (d) no one
- 15 the degree of expression $x^5 + 2x^2y^2 + 3y^4$ is
 (a) 4 (b) 2 (c) 6 (d) 5
- 16 An algebraic expression with three terms is called?
 (a) Monomial (b) Binomial (c) Trinomial (d) Polynomial
- 17 simplify: $(-x) \times (-x) \times (-x) ?$
 (a) $3x$ (b) x^3 (c) $-x^3$ (d) $3 \times x$
- 18 the degree of sum of expressions $x^4 + 4y^2 - 5xy$ and $x^3 - y + 2xy$ is?
 (a) 4 (b) 5 (c) 7 (d) 2
- 19 take away $2x^2 - 10$ from $x^2 + y^2$ is?
 (a) $3x^2 + y^2 - 10$ (b) $-x^2 + y^2 + 10$ (c) $x^2 + y^2 + 10$ (d) $10 - x^2 - y^2$
- 20 the length of rectangle is $(x + 3)$ and its breadth is $(x - 5)$. The area of the rectangle is?
 (a) $x^2 + 15$ (b) $x^2 - 2x - 15$ (c) $x^2 + 8x + 15$ (d) $15 + 8x - x^2$

Q#02: Define the followings.

VARIABLE :

COEFFICIENT :

CONSTANT :

ALGEBRAIC TERM :

POLYNOMIALS :

TRINOMIAL :

UNLIKE TERMS :

Question#03: Attempt the following questions.

1 add $4x^2 - 2xy + y^2$, $2xy + x^2 + y^2$, $4x^2 - xy + y^2$

2 subtract $x^2 - y^2 + z^2 + 2yz$ from $x^2 + y^2 + z^2 + 2yz$.

3 what should be subtracted from $4a^3 + 3a^2 - a - 5$ to give a remainder of 4.

4 Arrange in ascending or descending order of the indicated variable $4b^3 - ab^2 + a^3 - a^2b^2$

5 simplify $(10x)^2 \times (10x)^3$

6 simplify $5a(4a^2 - 7a - 8)$

7 simplify $6mn(2m - 3n)$

8 simplify $z^2(x^2 - y^2) + x^2(y^2 - z^2) + y^2(z^2 - x^2)$

9 simplify $(6x^2y - 4xy^2) \div 2xy$

10 simplify $\frac{a^2 - 2ab + 3a^2b^2}{a} + \frac{b^2 - 4bc + 5bc^2}{b} + \frac{5c^2 - ac}{c}$

