**CHAPTER # 1**

**“SETS”**

1. and are

a) Equal Sets b) Equivalent Sets c) Equivalent Sets d) none

1. If, only , then Set are:

a) Equal Sets b) Equivalent Sets c) Both d) none

1. For ;

a) 8 b) 9 c) 16 d) 15

1. For ; contains \_\_\_\_\_\_\_\_\_\_ proper subsets.

a) 1 b) 8 c) 15 d) 16

1. For ; contains \_\_\_\_\_\_\_\_\_\_ Improper subsets.

a) 1 b) 8 c) 15 d) 16

1. Which of the sequence is correct?

a) b) c) d)

1. If, , them are also.

a) Proper subsets b) Equal Sets c) Both d) none

1. is a :

a) monomial set b) binomial set c) finite set d) singleton set

1. The Tabular Form of the set:

a) b) c) d) none

1. Which Set has only one possible proper subset?

a) b) Improper Subset c) Singleton Set d) Power set

1. Which Set has no possible subset?

a) b) Improper Set c) Singleton Set d) Power Set

1. \_\_\_\_\_\_\_\_\_\_ Set is the Proper Subset of Every Set?

a) b) Improper Set c) Singleton Set d) True Set

1. If, , then the sets are,

a) Null Set b) Composite c) Overlapping d) Disjoint

1. If, , has a Finite Set then the sets are:

a) Null Set b) Composite c) Overlapping d) Disjoint

1. and are,

a) Disjoint Sets b) Overlapping Sets c) Equivalent Sets d) both (a) and (c)

1. Which of the Following is the Expression For De-Morgan’s Law:

a) b) c) d) none

1. (use neon diagram for help)

a) b) c) d) none

1. .

a) b) A c) d) all

1. .

a) b) c) d)

1. .

a) b) c) d) none

1. .

a) b) c) d) none

1. If , such that

a) 8 b) 32 c) 9 d) 16

1. A Relation is said to be a Function, only and only when,

a) Domain are unique b) Domain Set = Input Set A c) Range are unique d) both (a) & (b)

1. A Function is said to be Onto, when,

a) Range set = Input Set B b) Range is unique c) Domain and Range have one-one correspondence d) both (a) & (b)

1. A Function is said to be One-One Function, when:

a) Domain is unique b) Range set = Input set (B) c) Domain and Range have one-one correspondence d) both (a) & (b)

1. A Function is said to be Bi jective Function, when

a) Range set = Input Set B b) Domain is unique c) Domain and Range have one-one correspondence d) both (a) & (c)

1. .

a) b) c) d)



a) b) c) d)



a) b) c) d) none

1. The Origion of Caslessian Co-ordinate System lies on:

a) b) c) d)

1. Onto Functions are also known as:

a) Bijectives b) Surjectives c) Objectives d) Injective

1. In One-One Function are also called,

a) Bijectives b) Surjectives c) Injective d) none

1. .

a) b) c) d)

1. If then,

a) b) c) d)

1. The null set is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ set of every set.

a) Super b) Proper Subset c) Subset d) In proper Subset

1. The set of all Subset of a set is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ set.

a) Power b) Null c) Super d) Proper

1. The number of Elements of Set is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) One b) two c) Zero d) three

1. Co-ordinate lies on:

a) x-axis b) y-axis c) z-axis d) None

1. Co-ordinate lies on:

a) x-axis b) y-axis c) z-axis d) None

1. Co-ordinate lies in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Quadrant.

a) I b) II c) III d) IV

1. Co-ordinate lies in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Quadrant.

a) I b) II c) III d) IV

1. Co-ordinate lies in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Quadrant.

a) I b) II c) III d) IV

1. Co-ordinate lies in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Quadrant.

a) I b) II c) III d) IV

1. .

a) b) A c) U d) None

1. .

a) b) A c) U d) None

1. .

a) b) A c) U d) None

1. .

a) b) A c) U d) None

1. If then, .

a) A b) B c) C d) D

1. If then, .

a) A b) B c) C d) D

1. If , then

a) b) c) 16 d) 8

1. ;

a) b) c) d)

1. If then .

a) b) c) d)

1. Tabular Form of is

a) b) c) { } d)

1. Tabular Form of is

a) b) c) d)

**ANSWER KEY**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** |  | **11** |  | **21** |  | **31** |  | **41** |  | **51** |  |
| **2** |  | **12** |  | **22** |  | **32** |  | **42** |  | **52** |  |
| **3** |  | **13** |  | **23** |  | **33** |  | **43** |  | **53** |  |
| **4** |  | **14** |  | **24** |  | **34** |  | **44** |  | **54** |  |
| **5** |  | **15** |  | **25** |  | **35** |  | **45** |  |  | |
| **6** |  | **16** |  | **26** |  | **36** |  | **46** |  |
| **7** |  | **17** |  | **27** |  | **37** |  | **47** |  |
| **8** |  | **18** |  | **28** |  | **38** |  | **48** |  |
| **9** |  | **19** |  | **29** |  | **39** |  | **49** |  |
| **10** |  | **20** |  | **30** |  | **40** |  | **50** |  |

**CHAPTER # 2**

**“SYSTEM OF REAL NUMBERS”**

1. Rational numbers are:

a) Terminating b) Non-Terminating and Non-Recurring c) Non-Terminating and Recurring d) both (a) & (c)

1. Irrational numbers are:

a) Terminating b) Non-Terminating and Non-Recurring c) Non-Terminating and Recurring d) both (a) & (c)

1. is a:

a) Rational Number b) Irrational Number c) Complex Number d) None

1. is a:

a) Rational Number b) Irrational Number c) Natural Number d) None

1. is a:

a) Rational Number b) Irrational Number c) Whole Number d) None

1. is a:

a) Real Number b) Irrational Number c) Rational Number d) Imaginary Number

1. The additive Identity is:

a) b) c) d) None

1. The Multiplicative Identity is:

a) b) c) both d) None

1. Additive Inverse of is:

a) b) c) d) None

1. Multiplicative Inverse of is:

a) b) c) d) None

1. Additive Inverse of is:

a) b) c) d)

1. Multiplicative Inverse of is:

a) b) c) d)

1. .

a) b) c) d)

1. .

a) b) c) d)

1. .

a) b) c) d) None

1. .

a) b) c) d)

1. An Expression Involving at least one term as a un dissolvable radical state is called a:

a) Imaging Expression b) Irrational Expression c) Surd d) None

1. A Surd is :

a) Rational Number b) Irrational Number c) Natural Number d) Complex Number

1. The Conjugate of the binomial Surd is:

a) b) c) d) None

**ANSWER KEY**

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

**CHAPTER # 5**

**FRCTORIZATION**

**(PART-I)**

1. can be Factorized as: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. is Factorized as: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. can be Factorized as: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. can be Factorized to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. can be Factorized to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. Factors of are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. .

a) b) c) d)

1. can be Factorized to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. Factors of are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. The Conjugate of is:

a) b) c) d) None

1. is said to be the surd of order:

a) 2 b) 4 c) 3 d) 5

1. is said to be the surd of order:

a) b) 3 c) 6 d) None

1. .

a) 4 b) 25 c) -4 d) 24

1. The product of a Surd with its conjugate is always :

a) Rational Number b) Irrational Number c) Re-stable Number d) All

1. If, ; , then .

a) 10 b) 20 c) 15 d) -20

1. If, , then

a) 2 b) 16 c) 4 d) Not possible

1. If, , then

a) 2 b) 16 c) 4 d) Not possible

**ANSWER KEY**

|  |  |  |  |
| --- | --- | --- | --- |
| **1** |  | **11** |  |
| **2** |  | **12** |  |
| **3** |  | **13** |  |
| **4** |  | **14** |  |
| **5** |  | **15** |  |
| **6** |  | **16** |  |
| **7** |  | **17** |  |
| **8** |  |  | |
| **9** |  |
| **10** |  |

**CHAPTER # 6**

**ALGEBRAIC SENTENCES**

1. The sum of two numbers is and this product is , the number are,

a) 9, 1 b) 2, 12 c) 6, 4 d) None

1. Determine three consecutive even numbers whose sum is :

a) 2, 4, 6 b) 4, 6, 8 c) 6, 8, 10 d) 8, 10

1. ,

a) b) c) { } d)

1. ,

a) b) c) d)

1. ,

a) b) c) d) None

1. ,

a) b) c) d) None

1. ,

a) b) c) d)

1. The Solution Set of is:

a) 18 b) c) d) None

1. Equations having degree 1 are called:

a) linear Equations b) Cubic Equations c) Quadratic Equations d) None



a) b) c) d)

**ANSWER KEY**

|  |  |  |  |
| --- | --- | --- | --- |
| **1** |  | **6** |  |
| **2** |  | **7** |  |
| **3** |  | **8** |  |
| **4** |  | **9** |  |
| **5** |  | **10** |  |

1. is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Equation.

a) Linear b) Cubic c) Quadratic d) None

1. The Equation having degree are called:

a) Linear Equations b) Quadratic Equations c) Cubic Equations d) None

1. The Equation is:

a) Linear b) Quadratic c) Cubic d) None

1. is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Equation.

a) Linear b) Quadratic c) Cubic d) None

1. Each linear Equation represents a:

a) tangent b) curve c) line d) Hyperbola

1. Each quadratic Equation represents a:

a) tangent b) curve c) line d) None

1. Equation remains Quadratic until:

a) b) c) d) both (b) & (c)

1. Equation will be linear is:

a) b) c) d) both (b) & (c)

1. The perimeter of a rectangle having length and width is:

a) b) c) d) None

1. The Area of a rectangle having length and width is:

a) b) c) d) None

1. The roots of the standard form of a Quadratic Equation are:

a) b) c) d) None

1. The roots of the Equation are:

a) b) c) d) None

1. The simultaneous solution of two Equations gives there, point of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) intersection b) distruction c) disersion d) None

**CHAPTER # 20**

**TRIGNOMETRY**

1. In Right angled Triangles, the side opposite to the angle under consideration is refered as:

a) Hypoteneous b) Perpendicular c) Base d) None

1. The longest side of a right angled triangle is:

a) Hypoteneous b) Perpendicular c) Base d) None

1. If Base and Perpendicular of a right angled Triangle are equal, the two angles except of are:

a) b) c) d)

1. Above type of triangle is called:

a) Equilateral triangle b) Scalene triangle c) Isosceles triangle d) None

1. Is it possible in case of a right angle triangle that Hypotenuse is equal to either perpendicular or base?

a) Yes b) No c) Mat be d) May Not be

1. .

a) b) 1 c) d)

1. .

a) b) 1 c) d)

1. .

a) b) c) d)

1. .

a) b) c) d)

1. .

a) b) c) d) none

1. .

a) b) c) d)

1. .

a) cos b) cosec c) cot d) cotan

1. .

a) b) c) d)

1. .

a) 1 b) -1 c) 0 d) None

1. .

a) 1 b) -1 c) 0 d) None

1. The Identify: .

a) 1 b) c) d)

1. In .

a) b) c) d)

1. In .

a) b) c) d)

1. In .

a) b) c) d) None

1. In .

a) b) c) d)

1. In and measure of it’s sides respectivlery; then, .

a) b) c) d)

1. The angle of Elevation from the ground to the top of a tree and the angle of depression from the tree to the same point of the ground are:

a) Corresponding angles b) Adjacent angles c) Alternate angles d) Vertical angles

1. A kite is above the ground and the length of the thread held loosed for flight is of . The horizontal distance of kite from the hand is:

a) b) c) d) None

“BASIC CONCEPTS OF GEOMETRY”

1. The points lieing on the same location are called:

a) Coincident lines b) Collinear points c) Co-accident points d) Coincident points

1. The points lieing on the same line are called:

a) Coincident lines b) Collinear points c) Co-accident points d) Coincident points

1. The lines upresents a same line are called:

a) Coincident lines b) Collinear points c) Co-accident lines d) Collinear lines

1. A uni dimensional collection of points extending to infinity from both sides is called a / an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) Array b) Space c) Line d) Plane

1. A particular portion of a line having points at both sides and has finite length is called:

a) Ray b) line segment c) Secant d) Half Ray

1. A particular portion of a line having one end as a point and other extending to is:

a) Ray b) line segment c) Secant d) Half Ray

1. A particular portion of a line having one end at a point; EXCLUDED the point and other extending to is called:

a) Ray b) line segment c) Secant d) Half Ray

1. For the two rays, .

a) b) c) d)

1. For the two rays, .

a) b) c) d)

1. The angle are: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Angle.

a) Acute b) Oblique c) Obtuse d) Right

1. The angle are: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Angle.

a) Acute b) Oblique c) Obtuse d) Right

1. The angle are: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Angle.

a) Acute b) Oblique c) Obtuse d) Right

1. The angles whose arms from two pairs of opposite ray are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Angles.

a) Alternate b) Corresponding c) Vertical d) Adjacent

1. The angles having; common vertex, one common arm and perfectly disjoint are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Angles.

a) Alternate b) Corresponding c) Vertical d) Adjacent

1. The Adjacent angles having their sum equal to are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ angles:

a) Alternate b) Supplementary c) Vertical d) Complimentary

1. The Adjacent angles having their sum equal to are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ angles.

a) Alternate b) Supplementary c) Vertical d) Complimentary

1. The sum of two interior angles of a triangle are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than Exterior angles oppositely formed.

a) Less b) Greater c) Equal d) None

1. Parallel lines:

a) do not Intersects b) Intersects at c) are co-planar d) Both (a) and (c)

1. The lines which are not parallel are called:

a) Co-planar lines b) skiving lines c) Collinear lines d) skew lines

1. Distance between parallel lines is always:

a) Variable b) Constant c) Change with time d) Zero

1. If, Two sides and the angle b/w them are perfectly congruent, in correspondence of another triangle, The triangles are:

a) Equal b) Equilateral c) Concurrent d) Congruent

1. The sum of all angles of a triangle is:

a) b) c) d) etc.

**CHAPTER # 4**

**“ALGEBRIC EXPRESSIONS”**

1. Algebraic Expressions has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) logical meaning b) No logical meaning c) Graphical meaning d) Both (a) & (b)

1. Algebraic Sentences has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) logical meaning b) No logical meaning c) Graphical meaning d) Both (a) & (b)

1. is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) Algebraic Expression b) Algebraic Sentence c) Both (a) & (b) d) None of all

1. has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ terms.

a) 1 b) 2 c) 3 d) 4

1. has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ terms.

a) 7 b) 5 c) 9 d) 2

1. is a:

a) Polynomial b) Rational Expression c) Monomial d) Irrational Expression

1. is:

a) Polynomial b) Rational Expression c) Monomial d) Irrational Expression

1. is:

a) Polynomial b) Rational Expression c) Binomial d) Irrational Expression

1. is:

a) Polynomial b) Rational Expression c) Binomial d) Irrational Expression

1. is:

a) Polynomial b) Rational Expression c) Binomial d) Irrational Expression

1. Polynomial is a:

a) Monomial b) Binomial c) Trinomial d) Polynomial

1. Degree of: is:

a) 3 b) 6 c) 15 d) 7

1. Degree of a constant is:

a) 1 b) 2 c) 0 d) 3

1. Degree of “Geometrical pie” is:

a) b) 3.14 c) 0 d) None

1. Degree of is:

a) 0 b) 1 c) 2 d)

1. Degree of is:

a) 7 b) 2 c) -7 d) 9

1. Equation having degree is:

a) Linear Equation b) Quadratic Equation c) Cubic Equation d) Quadrille Equation

1. Equation having degree is:

a) Linear Equation b) Quadratic Equation c) Cubic Equation d) None of all

1. If, ; Find

a) b) c) d)

1. Find, , when,

a) 7 b) 6 c) 3 d) 4

1. Two terms can be added only and only when their variables are:

a) like b) unlike c) zero d) 2

1. .

a) 0 b) c) d)

1. For what value of is perfectly divisible by

a) 1 b) 2 c) 3 d) 4

1. Is a factor of ?

a) Yes b) No c) May be d) Don’t know

1. Is a root of ?

a) Yes b) No c) May be d) Don’t know

1. .

a) b) c) d)

1. .

a) b) c) d) None

1. .

a) b) c) d) None

1. ; , Find

a) b) c) d) None

1. ; , Find

a) b) c) d) None

1. , then,

a) 9 b) 47 c) 7 d) 49

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) b) c) d)

1. .

a) b) c) d)

1. .

a) b) c) d)

1. is written in:

a) Ascending order b) Descending order c) Both d) None

1. is written in:

a) Ascending order b) Descending order c) Both d) None

**LOGARITHMS**

1. Scientific notation of is:

a) b) c) d)

1. Scientific notation of is:

a) b) c) d)

1. The Logarithm is an operator to determine unknown \_\_\_\_\_\_\_\_\_\_ of the known bases.

a) Exponents b) Co-efficient c) Power d) none

1. is \_\_\_\_\_\_\_\_\_\_ representation.

a) Scientific b) Logarithmic c) Exponential d) Trigonometric

1. is \_\_\_\_\_\_\_\_\_\_ representation.

a) Scientific b) Logarithmic c) Exponential d) Trigonometric

1. The Logarithms to the base ‘10’ are called:

a) Brigg’s log b) Exponential log c) Natural log d) both (b) & (c)

1. The Logarithms to the base of ‘e’ are:

a) Brigg’s log b) Exponential log c) Natural log d) both (b) & (c)

1. = \_\_\_\_\_\_\_\_\_\_.

a) 10 b) c) 1 d) none

1. = \_\_\_\_\_\_\_\_\_\_.

a) 7 b) 0 c) 1 d)

1. = \_\_\_\_\_\_\_\_\_\_.

a) 10 b) 1 c) 0 d)

1. = \_\_\_\_\_\_\_\_\_\_.

a) 1 b) b c) a d) 10

1. = \_\_\_\_\_\_\_\_\_\_.

a) b) c) 1 d)

1. = \_\_\_\_\_\_\_\_\_\_.

a) 0 b) 10 c) d) 1



a) b) c) d)



a) b) c) both (a) & (b) d)

1. , then,

a) b) 2 c) d) 0.2

1. If , then,

a) 100000 b) 1000 c) 0.00001 d) 0.0001

1. ,

a) 2 b) 6 c) 4 d) 8

1. If ,

a) 0.349 b) 0.6925 c) 1.398 d) none

1. If , x equal to:

a) 10 b) 100 c) 2 d) 200

1. If ,

a) 0.909 b) 0.609 c) 1.818 d) 0.307

1. The Integral part of logarithm is called:

a) Determinant b) Mantissa c) Discriminant d) Characteristic

1. The decimal part of logarithm is called:

a) Determinant b) Mantissa c) Discriminant d) Characteristic

1. For , Characteristic is:

a) 2 b) 3 c) 4 d) 5

1. For , Characteristic is:

a) 2 b) 3 c) -2 d) -3

1. For , Characteristic is:

a) 0 b) 2 c) 3 d) 4

1. For , Characteristic is:

a) 0 b) 1 c) 2 d) 3

1. For , Characteristic is:

a) 3 b) 0 c) 1 d) -1

1. If, , then

a) 0 b) 2 c) 6 d) 4

1. Mantissa is always:

a) positive b) negative c) both (a) & (b) d) none

**CHALLENGING M.C.Q’s**

* If, , then

a) b) 9 c) d) 3

**MATRICES**

1. Matrices were First introduced by:

a) Bonjmin Franklin b) Albert Elenstinc c) Briggs d) Arther Kelley

1. Order of a matrix is:

a) b) c) d) Both (a) & (b)

1. Then Oder of Matrix is:

a) b) c) d) None of all

1. Two Matrix are said to be Equal if, they are having:

a) same order b) same brackets c) same corresponding Ele. d) Both (a) & (c)

1. If number of columns = no. of rows, Matrix is called:

a) Rectangle b) Square c) Scalar d) Oval

1. If number of columns no. of rows, Matrix is called:

a) Rectangle b) Square c) Scalar d) Elliptical

1. A row matrix has \_\_\_\_\_\_\_\_\_\_ rows.

a) Maximum b) 1 c) 2 d)

1. A Columns matrix has \_\_\_\_\_\_\_\_\_\_ columns.

a) Maximum b) 1 c) 2 d)

1. A matrix having Elements on its Principle diagonal and rest are zero is called \_\_\_\_\_\_\_\_\_\_ Matrix.

a) Square b) Scalar c) diagonal d) Identity

1. A Diagonal matrix having all values zero except same values at Principle diagonal is called \_\_\_\_\_\_\_\_\_\_ matrix.

a) Scalar b) Square c) Symmetric d) None

1. A Scalar matrix having all values at Principle diagonal Equals to unity (i.e, 1) is \_\_\_\_\_\_\_\_\_\_ matrix.

a) Symmetric b) Skew Symmetric c) Identity d) Unity

1. A Matrix having all values Equal to zero is called \_\_\_\_\_\_\_\_\_\_ matrix.

a) Null b) Zero c) both (a) & (b) d) no matrix

1. Additive Identity for matrices is \_\_\_\_\_\_\_\_\_\_ Matrix.

a) Null b) Scalar c) Identify d) None

1. Multiplicative Identity for matrices is \_\_\_\_\_\_\_\_\_\_ Matrix.

a) Null b) Scalar c) Identify d) None

1. is a \_\_\_\_\_\_\_\_\_\_ Matrix.

a) Scalar b) Diagonal c) Square d) None

1. If ,

a) b) c) Both (a) & (b) d) None

1. = \_\_\_\_\_\_\_\_\_\_.

a) b) c) d) A



a) b) c) d)

1. If, , Matrix is said to be \_\_\_\_\_\_\_\_\_\_ Matrix.

a) Rational b) Equal c) Symmetric d) Transpose

1. If, , Matrix is said to be \_\_\_\_\_\_\_\_\_\_ Matrix.

a) Rational b) Equal c) Symmetric d) Skew-Symmetric

1. Addition of Matrices is only possible, if

a) Same Values b) Same Order c) Same Principle Dia d) none

1. , = ?

a) b) c) d)

1. Additive Inverse of is:

a) b) c) d) None



a) b) c) Both d) None

1. Matrix Multiplication is only possible if,

a) Same Order b) Rows of A = Column of B c) Column of A = Rows of B d) None of all

1. In Matrices,

a) b) c) d)



a) b) c) Both d) None

1. If, , Matrix is:

a) Singular b) Square c) Non-Singular d) Rectangle



a) 16 b) 2 c) d) None

1. Find the value of y, if

a) 2.5 b) 1.5 c) 1.3 d) None

1. , A = ?

a) b) c) d)

1. If, AB = BA = I, then A & B are:

a) Additive Identity b) Multiplicative Identity c) Additive Inverse d) Multiplicative Inverse

1. = \_\_\_\_\_\_\_\_\_\_.

a) O b) I c) X d) Y

1. = \_\_\_\_\_\_\_\_\_\_.

a) O b) I c) X d) Y

1. = \_\_\_\_\_\_\_\_\_\_.

a) b) c) Both d) None

1. In Matrix form Equation can be written as:

a) b) c) d)

**“INFORMATION HANDLING”**

1. The Characteristic that can differ for each value of Element in Data set is called:

a) Sample b) Variable c)Population d) none

1. Numerically Expressed Variables are called:

a) Qualitative b) Quantitative c) Cumulative d) none

1. Representation of colours in the form of variables will be included as \_\_\_\_\_\_\_\_\_\_ variables.

a) Qualitative b) Quantitative c) Cumulative d) none

1. A variable representing Hight of Student in X class will be classified as \_\_\_\_\_\_\_\_\_\_ variable.

a) Qualitative b) Discrete c) Continues d) both (b) & (c)

1. A Variable representing no. of Hospitals in Karachi will be classified as \_\_\_\_\_\_\_\_\_\_ variable.

a) Qualitative b) Discrete c) Continues d) none

1. Collection of all observation related to the Characteristic is:

a) Sample b) Variable c) Population d) none

1. The upper limit of the class (65-70) is:

a) 65 b) 70 c) 67.5 d) none

1. The lower limit of the class (65-70) is:

a) 65 b) 70 c) 67.5 d) none

1. The midpoint of the class (65-70) is:

a) 65 b) 70 c) 67.5 d) none

1. The Range in Ungroup data is the difference b/w:

a) Class limits b) Class Boundaries c) Mean limits d) none

1. The Range in Group data is the difference b/w:

a) Class limits b) Class Boundaries c) Mean limits d) none

1. Mean of is:

a) 3.666 b) 4.4 c) 4.833 d) none

1. Median of values is:

a) 2 b) 3 c) 4 d) 6

1. Median of values :

a) 2.5 b) 3.5 c) 4.5 d) 5.5

1. Mode for :

a) 2 b) 7 & 2 c) 7 d) none

1. Mode for is:

a) 2.4 b) 2.5 c) 2.3 d) none

1. If Standard deviation for certain values is 4, Variation is:

a) 2 b) 16 c) 8 d) none

1. If, , then Standard deviation is:

a) 6561 b) -9 c) 9 d) both (b) & (c)

1. If the Sum of Variance and Standard deviation is zero, Standard deviation is:

a) 0 b) 1 c) -1 d) both (a) & (b)

1. If the difference of Variance to Standard deviation is zero, S.D is,

a) 0 b) 1 c) -1 d) both (a) & (b)

1. The product of Variance and Standard deviation is 27, then S.D is:

a) 2 b) 3 c) 4 d) 5

1. If, the Sum of 16 terms is zero, their mean is:

a) 16 b) 256 c) 0 d) none

**NARIATIONS**

1. If , then ‘a’ is:

a) antecedent b) anti denticent c) Consequent d) none

1. If , then ‘b’ is:

a) antecedent b) anti denticent c) Consequent d) none

1. For , the ratio is \_\_\_\_\_\_\_\_\_\_ ratio.

a) Sub-duplicate b) duplicate c) twice d) Triplicate

1. For , the ratio is \_\_\_\_\_\_\_\_\_\_ ratio.

a) Sub-duplicate b) duplicate c) triple d) Triplicate

1. For , the ratio is \_\_\_\_\_\_\_\_\_\_ ratio.

a) Sub-duplicate b) duplicate c) Half d) Triplicate

1. An Equality b/w two ratio is called:

a) Equation b) Proportion c) In Equation d) none

1. The first and last values of a proportion are:

a) Extremes b) Continuity c) Means d) Medians

1. The Second and Third values of a proportion are:

a) Extremes b) Continuity c) Means d) Medians

1. For Same mean Values, Proportion is said to be:

a) Equal b) Continued c) Synchronized d) Stable

1. In Continued proportions, ratio is Equal to its:

a) sub-duplicate ratio b) duplicate ratio c) Triplicate ratio d) none

1. The Fourth proportion to 8, 4, 2 is:

a) 0 b) 1 c) 2 d) 3

1. The Third proportion to 6, 18 is:

a) 52 b) 53 c) 54 d) 55

1. The mean proportion to 14, 56 is:

a) 28 b) 27 c) d)

1. If then is \_\_\_\_\_\_\_\_\_\_ property.

a) Altenando b) Invertando c) Componando d) Dividendo

1. If then is \_\_\_\_\_\_\_\_\_\_ property.

a) Altenando b) Invertando c) Componando d) Dividendo

1. If then is \_\_\_\_\_\_\_\_\_\_ property.

a) Altenando b) Invertando c) Componando d) Dividendo

1. If then is \_\_\_\_\_\_\_\_\_\_ property.

a) Altenando b) Invertando c) Componando d) Dividendo

1. If then is \_\_\_\_\_\_\_\_\_\_ property.

a) Altenando b) Componando - Dividando c) Componando d) Dividendo

1. For Direct variation, the parameters form:

a) Straight line b) Both c) Curve d) None

1. Inverse Nariation plots:

a) Straight line b) Both c) Curve d) None

**PART-II GEOMETRY (CONT.)**

**QUADRILATRALS**

1. The type of 2D shape having four vertices is called:

a) Pentagon b) Quadrilateral c) Triangle d) Tetrahedron

1. The sum of the angles of a Quadrilateral is:

a) b) c) d)

1. The Quadrilateral having two pairs of sides to each other are called:

a) Trapezoid b) Parallelogram c) Rhombus d) None

1. The Quadrilateral having two sides parallel and two non-parallel are called:

a) Trapezoid b) Parallelogram c) Trapezium d) None

1. The Trapezoid having non parallel sides of same length are called:

a) Parallelogram b) Trapezium c) Both d) None

1. The parallelogram having set of two side of same length and other pair of same length to other is:

a) Square b) Rectangle c) Rhombus d) none

1. having All sides of Equal length:

a) Square b) Rectangle c) Rhombus d) none

1. A Rhombus having all angles of .

a) Square b) Rectangle c) Trapezoid d) none

**TRIANGLE**

**(REMAINING)**

1. A line passing through the mid pt. of another line perpendicularly is called:

a) Bisector b) Right bisector c) Median d) Altitude

1. The lines originating from vertices to the midpoint of the opposite side are called:

a) Bisector b) Right bisector c) Median d) Altitude

1. Pt. of intersection of Median is called:

a) Centroid b) Orthocenter c) Circum centre d) none

1. The lines originating from vertices to the opposite side perpendicularly are called:

a) Bisector b) Right bisector c) Median d) Altitude

1. A ‘Centroid’ divides a median into a ratio of:

a) b) c) d)

1. For Obtuse , pt. of intersection of Right bisector lies \_\_\_\_\_\_\_\_\_\_ the :

a) Inside b) On the c) Outside d) none

1. Medians intersects always \_\_\_\_\_\_\_\_\_\_ triangle.

a) Inside b) On the c) Outside d) none

1. In the case of Altitudes of Right Triangle, they are:

a) Equal b) Coincident c) Un Equal d) Coherent

**CIRCLES**

1. A shape which has a Fixed distance from a Fixed point is called:

a) Oval b) parabola c) Circle d) Hyperbola

1. A line touching the circle at one point is called:

a) Secent b) Chord c) Tangent d) Radius

1. A line tangent to the circle is always to its radius (radial segment)

a) Parallel b) tangent c) perpendicular d) All

1. A line joining the circle from two points is:

a) Secent b) Chord c) Tangent d) Diameter

1. A line segment joining the circle from two points is called:

a) Secent b) Chord c) Tangent d) Diameter

1. A chord joining the centre of circle is called:

a) Chord b) Diameter c) Diagonal d) None

1. The half of the distance of diameter is:

a) Radius b) Chord c) None d) Both

1. A Triangle surrounded by a Circle is called:

a) In Circle b) Circum Circle c) E-Circle d) None

1. The centre of Circum Circle is:

a) Circum centre b) E-Circle c) In Centre d) Centre

1. The centre of E-Circle is:

a) e-centre b) Ortho centre c) in-centre d) Centroid

1. The tangent drawn from the same points on a circle are always \_\_\_\_\_\_\_\_\_\_ in length.

a) parallel b) Equal c) perpendicular d) Un Equal

**STEPS OF CONSTRUCTION OF CIRCUMCIRCLE**

1. Draw .
2. At point B draw.
3. With centre B draw an arc of cutting at point C.
4. Join A to C to form .
5. Draw the right bisectors , , of sides , and respectively intersecting each other at point O.
6. With centre O and radius draw a circle which is the required circumscribed circle.

**STEPS OF CONSTRUCTION OF INSCRIBED CIRCLE**

1. Draw .
2. With centre B draw an arc of radius .
3. With centre A draw another arc of radius cutting the previous arc at point C.
4. Join C with A and B.
5. Draw the bisectors , , of angles A, B and C respectively cutting each other at point I.
6. Draw perpendicular from I on .
7. With centre I and radius equals to draw a circle which is the required inscribed circle.

**STEPS OF CONSTRUCTION OF ESCRIBED CIRCLE**

, ,

1. Construct a as, constructed in circumcircle.
2. Produce and beyond points B and C making exterior angle AND .
3. Draw the bisectors , and of angle , and respectively intersecting at point I.
4. Draw the perpendicular from I on intersecting at point G.
5. With centre I and radius draw a circle opposite to vertex A which is the required escribed circle.

**DIRECT COMMON TANGENT**

1. Draw .
2. With centre and draw two circles I and II having radius and respectively.
3. With centre (centre of bigger circle) and radius (3 – 1 = 2 cm) draw circle III.
4. Bisect at point G.
5. With centre G and radius or draw circle IV cutting circle III at point P and Q.
6. Join with P and Q and produce them to meet circle I at point respectively.
7. With centres and radius equals to , draw arcs cutting circle II at points respectively.
8. Join T with R and with . and are the required direct common tangents.

**TRANSVERSE COMMON TANGENTS**

1. Draw .
2. With centre and draw two circles I and II having radius and respectively.
3. With centre (centre of bigger circle I) and radius (2 + 1 = 3 cm) draw circle III.
4. Bisect at point G.
5. With centre G and radius draw circle IV cutting circle III at points P and Q.
6. Join with P and Q cutting circle I at points respectively.
7. With centres and radius , draw two arcs cutting circle II at points respectively.
8. Join T with R and with . and are the required transverse common tangents.

**CIRCLE: -**

The circle is the set of all points in a plane which are equidistant from a fixed point of the plane. “The fixed point is called the central of the circle.

**RADIAL SEGMENT: -**

The line segment joining the fixed point (centre) to any points on the circle is called the radial segment.

**RADIUS: -**

The distance between any point on the circle and its centre is called the radius of the circle.

**CIRCUMFERENCE OF A CIRCLE: -**

The length of the curve joining all the points of a circle is called the circumference.

**CHORD OF A CIRCLE: -**

The line segment whose end point are any two points of the circle.

**SECANT: -**

Any line intersecting the circle in two distinct points is called Secant.

**DIAMETER: -**

A chord which passes through the centre of the circle is called a diameter.

**ARC OF A CIRCLE: -**

Any portion or part of a circle is called arc of a circle.

**SEMI-CIRCLE: -**

The portion of a circle intercepted by a diameter is called a Semi circle (or) half circle.

**MINOR ARC: -**

An arc which is less than is semicircle is called a minor arc.

**MAJOR ARC: -**

An arc which is greater than a semicircle is called a major arc.

**CENTRAL ANGLE OF AN ARC: -**

The angle subtended by an arc at the centre is called central angle of an arc.

**INSCRIBED ANGLE OF AN ARC: -**

An angle is called an inscribed angle of an arc. If,

* The arms of the angle pass through the end points of an arc.
* The vertex of the angle is any point of the arc except the end points.

**TANGENT: -**

The line that touch the circle at only one point.

**CONCENTRIC CIRCLES: -**

Circle having common centre.

**RIGHT BISECTORS OF A SIDES OF A TRIANGLE**

A straight line, which bisects the side of triangle and is perpendicular to the side is called the right bisector of the side. The point of concurrency of right bisector is circumcentre.

**NOTE:-** Three or more lines are said to be concurrent of the intersect at a single point and this point is known as “point of concurrency”.

**ANGLE BISECTORS OF A TRIANGLE**

An angle bisector is a line that divide an angle into two congruent angles. The point of concurrency of angles bisectors is called “in centre”.

**MEDIANS OF A TRIANGLE**

Line segment joining, the vertices of a triangle to the midpoint of the opposite sides are called “Median” of a triangle & this point of concurrency is called “centroid”.

**ALTITUDES OF A TRIANGLE**

A perpendicular from the vertex of a triangle to the opposite side is called an “altitude” of the triangle. The point of concurrency is called the “centre”.

**CIRCLE ATTACHED TO A TRIANGLE**

**CIRCUM-CIRCLE OF A TRIANGLE: -**

A circle which passes through all the vertices of triangle is called a “circumcircle” or “circumscribe circle”. The centre of this circle is called “circumcentre” and radius is called “circumradius”.

**INSCRIBED CIRCLE (INCIRCLE) OF A TRIANGLE: -**

A circle inscribed with in a triangle so as to touch each of its side is called the “inscribed circle” or “Incircle”. The centre of this circle is called “Incentre” and the radius is called “Inradius”.

**ESCRIBED CIRCLE (E-CIRCLE) OF A TRIANGLE: -**

The circle which touches one side externally and the other two produced sides of a triangle. The centre of this circle is called “escribed centre” or “e-centre” and the radius is called “escribed radius” or “e-radius”.

**Draw Escribed circle**

**Q:** Construct a in which . Draw an Escribed circle opposite to vertex A.

**STEP OF CONSTRUCTION**

1. Draw a with given measurement.
2. Extend or produce. to point D and extend to point E.
3. Draw , the angle bisector of .
4. Draw , the angle bisector of and intersecting at point “O”.
5. Draw perpendicular to at point I.
6. With “O” as centre and radius , Draw a circle touches the two extended side and one non-extended side of a .
7. This is the required escribed circle.

**Draw Circum-Circle Of A Triangle**

**STEP OF CONSTRUCTION**

1. Draw a triangle ABC with given measurement.
2. Draw right bisector of .
3. Draw right bisector of .
4. Right Bisector and intersects each other at point “O”.
5. With centre “O” and radius or or , Draw a circle which touch all the three vertices of .
6. This is the required “circumcircle”.

**DRAW AN INSCRIBED CIRCLE**

**STEP OF CONSTRUCTION**

1. Draw with the given measurement.
2. Draw an angle bisector of , Draw an arc with “B” as centre, Draw an arc of any radius which intersect the sides and at D and E respectively. Now with centre D and E, draw two arcs having same radius intersect each other at point I.
3. Similarly draw the bisector of .
4. With centre I, draw an arc of suitable radius intersects at point P and Q respectively.
5. With point P and Q. Draw two arcs of same radius draw two arcs intersecting each other at point H.
6. Draw , intersecting at point “S”, which is perpendicular to .
7. Now with centre I and radius equal to , draw a circle.

**Draw the tangent**

**Q:** Draw a circle of radius . Take a point “T” at a distance of from the centre. Draw tangent to the circle passing through “T” measure the length and verify with mathematical calculation (Pythagoras Theorem).

**STEP OF CONSTRUCTION**

1. Draw a circle of radius with centre “O”.
2. Draw a line segment from point “O” to “P” from point O to P such that .
3. Draw a right bisector of intersect at point M.
4. With “M” as centre with radius , draw two arcs cutting the circle at point “R” and “Q”.
5. Join P to Q and P to R and extended from Both sides.
6. and are the required tangent.

**Calculation:**

Using Pythagoras Theorem

**DRAW TRANSVERSE COMMON TANGENT**

**Q:** Draw the transverse Common tangent of a circle with radius and , when the distance between their centre is . Also verify by Mathematical Calculation.

**STEP OF CONSTRUCTION**

1. Draw equals to .
2. With P as centre and radius . Draw another circle with Q as centre & radius .
3. Draw a circle with radius equals to sum of the radius of the given circles at point “P” .
4. Find midpoint “M” of , with “M” as centre radius equals to or . Draw another circle cutting 3rd circle at A and B.
5. Joint P to A and P to B, cutting 1st circle at .
6. Draw and
7. Draw and and produce them on both sides required.

**DRAW DIRECT COMMON TANGENT**

**Q:** Draw two circle of radii and with the distance between their centre is equal to . Draw direct common tangent to these circles. Also verify answer by Mathematical Calculation.

**STEP OF CONSTRUCTION**

1. Draw a line segment .
2. With “P” as centre and radius , with “Q” as centre and radius , draw another circle.
3. Draw a circle with “P” is equals to the difference of radii of given circles .
4. Find the Midpoint “M” of .
5. Draw another circle, with “M” as centre and radius cutting the 3rd circle at A and B.
6. Join P to A and P to B and produce them to point respectively.
7. Draw and
8. Join T to R and and produce them on both side.
9. and are the required tangent.

**Calculation:**

Using Pythagoras Theorem