GOVERNMENT OF KARNATAKA

OFFICE OF THE DEPUTY DIRECTOR OF PUBLIC INSTRUCTION
DEPARTMENT OF PUBLIC INSCTRUCTION, CHIKKAMAGALURU

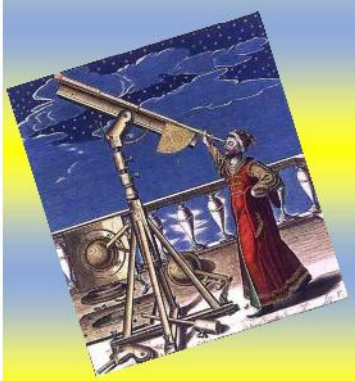
10TH STANDARD

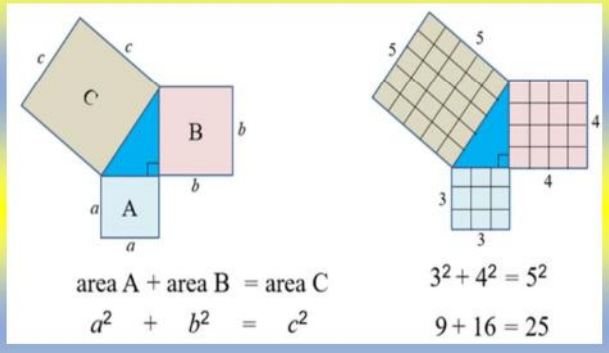
MATHEMATICS

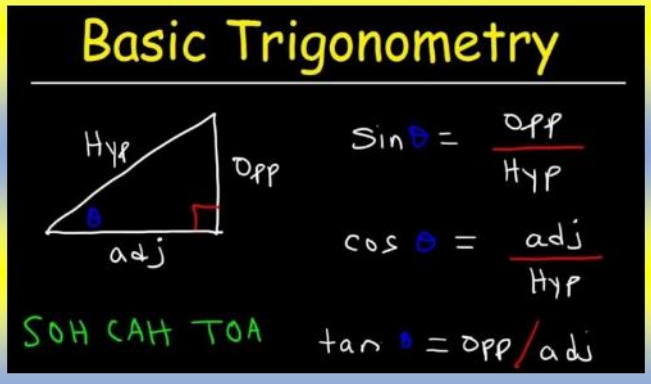
GANITHA GANI

QUESTION BANK-2020-21

PREPARED ACCORDING TO NEW EXAMINATION PATTERN







न हि ज्ञानेन सदृशं
पवित्रमिह विद्यते

GOVERNMENT OF KARNATAKA

ZILLA PANCHAYATH
OFFICE OF THE DEPUTY DIRECTOR(ADMINISTRATIVE)
DEPARTMENT OF PUBLIC INSTRUCTION, CHIKKAMAGALURU

INSPIRATION:

SRI M.R. MARUTHI
DIRECTOR ,D.S.E.R.T.,BANGALURU

CONCEPTUALIZATION :

SRI MALLESHAPPA
DEPUTY DIRECTOR(ADMISATRATIVE)
DEPARTMENT OF PUBLIC INSTRUCTION, CHIKKAMAGALURU.

Mrs. PUSHPALATHA, H.K.
PRINCIPAL AND DEPUTY DIRECTOR(DEVELOPMENT)
D.I.E.T .,CHIKKMAGALURU

GUIDENCE:

SRI JAYANNA K.N.,
EDUCATION OFFICER, CHIKKAMAGALURU

COOPERATION:

BLOK EDUCATION OFFICERS, CHIKKAMAGALURU
SENIOUR LECTURES, D.I.E.T., CHIKKAMAGALURU
DEPUTY PLANNING CORDINATAOR, S.S.K. CHIKKAMAGALURU
SUBJECT INSPECTORS,D.D.P.I., OFFICE CHIKKAMAGALURU
ASSISTANT PLANNING COORDINATOR,S.S.K., CHIKKAMAGALURU
LECTURERS, D.I.E.T., CHIKKAMAGALURU
BLOCK S.S.L.C. NODAL OFFICERS, CHIKKAMAGALURU
SUBJECT RESOURCE TEAM, CHICKKAMAGALURU

DISTRICT AND TALUK H.M.'S ASSOCIATION, CHIKKAMAGALURU
DISTRICT AND TALUK ASSISTANT TEACHERS ASSOCIATION, CHIKKAMAGALURU

COORDINATION COMMITTIEE

1. **SRI VASU, G.H.S.,MUTTINAKOPPA**
2. **Mrs. LATHA D.E.,G.H.S., ANGADI**
3. **Mrs. SHEELA G.M., G.H.S., SOMANAHALLI**
4. **Mrs. BHAGYASHREE N.M. G.J.C., MUGHTIHALLI**
5. **Mrs. GANAPI HEGADE, G.P.U.COLLEGE, MAILIMANE**
6. **Mrs. JYOTHI H.M., G.H.S., KURUVANGI**

LIVE WORK SHEETS: **1. SRI PRAKASH H.G., K.P.S.,N.R.PURA** **2. SRI KIRANKUMAR, K.P.S.,N.R.PURA**
GOOGLE FORM: **1. SRI YOGEESH N., G.H.S., KOTTIGEHARA** **2. SRI VASU, G.H.S. MUTTINAKOPPA**

GOVERNMENT OF KARNATAKA

OFFICE OF THE DEPUTY DIRECTOR(ADMINISTRATIVE)
DEPARTMENT OF PUBLIC INSTRUCTION, CHIKKAMAGALURU

LIST OF DISTRICT TEACHERS WHO INVOLVED IN PREPARING THE QUESTION BANK OF MULTIPLE CHOICE ACCORDING TO NEW EXAMINATION SYSTEM-2020-21

S.L.NO.	UNITS	RESOURCE PERSONS	SCHOOL
1	LINEAR EQUATION IN TWO VARIABLES	Mrs. GANAPI HEGADE	G.P.U.C. MAILIMANE
		Mrs. AMBIKA	G.H.S. LOKANATHAPURA
2	AIRTIIMETIC PROGRESSION	Mrs. LATIIA D.E.	G.II.S. ANGADI
		Mrs. SHEELA G.M.	G.H.S. SOMANAHALLI
3	QUADRATIC EQUATIONS	Mrs. NAGAMANI	A.M.R.G.H.S. BIRUR
		Sri. SHASHIKUMAR	K.L.K.G.P.U.C.H.S. BIRUR
4	FUNDAMENTALS OF TRIGONOMETRY AND TRIONOMETRIC APPLICATIONS	Sri. SIIIVASIIANKARA U.S.	G.II.S.IIOLEKOPPA
		Sri. RAGAVENDRA S.L.	G.H.S. THOREHADLU
5	COORDINATE GEOMETRY	Sri. KIRANKUMAR S.N.	K.P.S., N.R.PURA
		Mrs. BHAGYASHREE M.N.	G.P.U.C.H.S., MUGUTHIHALLI
6	STATISTICS	Mrs. JYOTHI M.	G.H.S., KURUVANGI
		Mrs. SAVITHA K.P.	G.H.S. SANGAMESHWARA PETE
7	TRIANGLES	Mrs. TRIVENI B.J.	A.R.S.P.U.C.H.S.,HARIHARAPURA
		Mrs. JYOTIII	G.II.S. TIIOGARIIIANKAL
8	CIRCLES	Sri. VASU	G.H.S.,MUTTINAKOPPA
9	CONSTRUCTIONS	Sri. HAREESH	G.H.S., KATTINAMANE
		Sri. YOGEESH Y.N.	G.H.S.,KOTTIGEHARA
10	SURFACE AREA AND SOLIDS	Sri. SRINGESWARA C.S.	G.P.U.C.II.S. KALASA
		Sri. SANDESH	G.P.U.C.H.S. KALASA

INDEX

UNIT 1 ---ARITHMETIC PROGRESSION

---

1. The n^{th} term of an Arithmetic Progression is given by the formula

A) $a_n = a + (n-1)d$ B) $a_n = a + (n+1)d$

C) $a_n = a + d$ D) $a_n = \frac{n(a+a_n)}{2}$

2. -1,-4,-7, …. The common difference of Arithmetic Progression is

A) -5 B) 5 C) -3 D) 3

3. The n^{th} term of Arithmetic Progression is given by $a_n = 3n+1$. Then its 3^{rd} term is

A) 9 B) 10 C) 4 D) 28

4. If 1 , x , 7 are in Arithmetic Progression then the value of "x" is

A) 4 B) 8 C) 6 D) 3

5. $a_n = 3n - 2$ is the n^{th} term of Arithmetic Progression. Then its 5^{th} term is

A) 15 B) 6 C) 17 D) 13

6.The sum of first n terms of an Arithmetic Progression is given by the formula.

A) $s_n = \frac{n}{2}(a + a_n)$ B) $s_n = \frac{n}{2}(a - a_n)$

C) $s_n = n(a + a_n)$ D) $s_n = n(a - a_n)$

7. The value of $\sum 5$ (sum of first 5 natural numbers) is

A) 10 B) 15 C) 20 D) 25

8. In an Arithmetic Progression a=10 and d =1.Then 20^{th} term is

A) 10 B) 19 C) 11 D) 29

9. 4,10,……..22 The 3^{rd} term of this Arithmetic Progression is

A) 6 B)16 C) 12 D) 26

10.The first term and common difference of the Arithmetic Progression -5,-1,3,7,……..are.

A) -5 and 4 B) -5 and -4 C) -5 and 6 D) -5 and -6

11. 2,7,12,….., The 10^{th} term of this Arithmetic Progression is

A) 12 B) 47 C) 52 D) 32.

12. 10,7,4,……The 30th term of this Arithmetic Progression is

A) 97 B) 77 C) -77 D)-87

13. -3 ,-1/2, 2…… The 11^{th} term of this Arithmetic Progression is

A) 28 B) 22 C) -38 D) $-48\frac{1}{2}$

14. If 2,__ , 26 are the terms of Arithmetic Progression, then the middle term is

A) 12 B) 14 C) -14 D) -16

15. a_n = 2n+3 is the n^{th} term of Arithmetic Progression. Then a_3=….

A) 5 B) 8 C) 9 D) 10

16. $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$……. The common difference of this Arithmetic Progression is……..

A) 0 B) $\frac{1}{2}$

C) 1 D) $\frac{1}{4}$

17. 7,4,1…. Next term of this Arithmetic Progression is

A) 3 B) -3 C) -2 D) 2

18. The sum of n terms of Arithmetic Progression is

A) $s_n = \frac{n}{2}[2a + (n-1)d]$ B) $s_n = \frac{n}{2}[2a - (n-1)d]$

C) $s_n = \frac{n}{2}[2a + (n+1)d]$ D) $s_n = \frac{n}{2}[a + (n-1)d]$

19. The 9^{th} term of the Arithmetic Progression 4,9,14,……is

A) 17 B) 44 C) 36 D) 40.

20. The 10^{th} term of the Arithmetic Progression 5,9,13,……. is

A) 36 B) 31 C) 41 D)21

21.Which of the following is not an Arithmetic Progression

A) 1,3,9,27. B) -5,-3, -1, 1

C) 2,6,10,14. D) 1,4,7,10.

22. In an Arithmetic Progression a_3=9 and d= 3. Then a_2 =

A) 3 B) 6 C) -3 D) -6.

23. In an Arithmetic Progression a=m and d=2m then a_5 =

A) 5m B) 8m C) 9m D)10m

24. $S_n = 3n + 1$ Then the common difference of Arithmetic Progression is

A)-1 B) 3 C) 9 D) 10

25. Which of the following is an Arithmetic Progression

A) -5,-2, 2, 4. B) 11,14,16,20

C) -1, 1, 3, 5 D) 3,6,12,24.

26. The sum of first 'n' natural numbers is

A) $S_n = \frac{n(n-1)}{2}$ B) $S_n = \frac{n(n+1)}{2}$

C) S_n = n(n + 1) D) S_n = a + (n – 1) d

27. The sum of first 20 odd numbers is

A) 400 B) 200 C) 410 D) 555

28) The sum of first 20 natural numbers is

A) 210 B)200 C)110 D)160

29) In 3 termed Arithmetic Progression, the middle term is 30. Then sum of end terms

A) 50 B) 60 C) 70 D) 30

30) S_n =50, S_{n-1} = 42, then the value of a_n is

A) 50 B) 42 C) 20 D) 8

31) The first term and common difference of the Arithmetic Progression -5, -1, 3, 7 ,…….. are

A) 5 and -4 B) -5 and +4

C) -5 and +6 D) -5 and -6

32) a_n =4n+5 is the n^{th} term of Arithmetic Progression. Then its 3^{th} term is

A) 5 B) 9 C) 13 D) 17

33) If a_n = 4n+1 then first three terms of Arithmetic Progression are

A) 5, 9, 13 B) 4, 5, 6

C) 4, 8, 12 D) 5, 8, 12

34) The sum of first 20 term of the Arithmetic Progression 3, 5, 7, …….. is

A) 220 B) 880 C) 440 D) 380

35) The first term is 26 and common difference is -7 ,Then the Arithmetic Progression is

A) 26,19,13,7 B) 26,18,11,4

C) 26,19,12,5 D) 26,18,12,5

36) The sum of first n terms of an Arithmetic Progression is given by the formula

A) $s_n = \frac{n}{2}(a+d)$ B) $s_n = \frac{n}{2}(a-l)$

C) $s_n = \frac{n}{2}(2a+l)$ D) $s_n = \frac{n}{2}(a+l)$

37) The sum of first 20 even numbers is ….

A) 400 B) 200 C) 420 D) 555

38) the sum of Arithmetic Progression 3, 7, 11……is 210. Then the number of terms are

A) 12 B) 16 C) 15 D) 10

39) -37, -33,-29 ---------- the common difference of this Arithmetic Progression is

A) -33 B) 25 C) -30 D) 4

40) The sum of first 20 multiples of 5 is

A) 100 B) 950 C) 1050 s D) 1000

UNIT--- TRIANGLES

1.The sides of two similar triangles are in the ratio 4:9, then the ratio of areas of these triangles is,

A)2:3 B) 4:9 C)81:16 D)16:81

2.Areas of two similar triangles are 81cm^2 and 16cm^2 respectively.The ratio of their corresponding sides is

A)9:4 B)16:81 C)4:9 D)64:9

3.Which of the following does not represent a Pythagorean triplet?

A)3,4,5 B) 5,12,13 C)24,25,7 D) 8,12,15

4.Two poles of length 6cm and 11cm are 12 cm apart. The distance between their tops is……

A) 13m B)7m C)15m D)14m

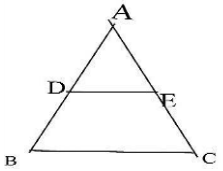
5. In ΔABD, ∟A=90^0 and AC ⊥ BD then AC^2 =……..

A) BC.BD B) BC.DC C) BD.CD D) AB.AD

6. One of the sides of isosceles Right angled triangle is 4√2cm, the measure of its Hypotenuse is……..

A)12√2cm B)12cm C)8√2cm D)8cm

7. In a equilateral triangle ABC ,D and E are the midpoints of AB and AC respectively.The ratios of the areas of ΔABC and ΔADE is…….



A) 2:1 B)1:2 C)4:1 D) 1:4

8. ΔABC ~ ΔEFD then the ratios of corresponding sides are…….

A)$\frac{AB}{FD} = \frac{BC}{EF}$ B)$\frac{AB}{EF} = \frac{BC}{FD}$ C)$\frac{AC}{EF} = \frac{BC}{ED}$ D) none of the above

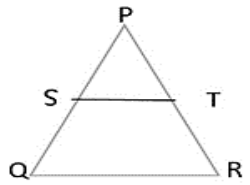
9. Length of the side of a rhombus with diagonals 12cm and 16cm is……..

A) 8cm B)9cm C) 10cm D)18cm

A) Thales theorem B) Converse of Thales theorem

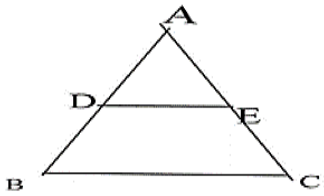
C)Pythagoras theorem D) Converse of Pythagoras theorem

11. In the following triangle, ST∥QR , $\frac{PS}{SQ}$ is equal to



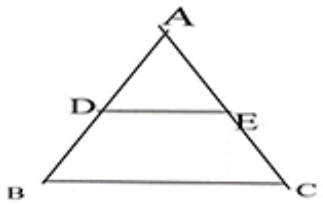
A)$\frac{PT}{TR}$ B) $\frac{PS}{TR}$ C) $\frac{PT}{SQ}$ D) $\frac{PT}{SR}$

12. In the following ΔABC, DE∥BC, AD=15cm ,BD=3cm and AE=10cm then the measure of CE is…..



A) 2cm B) 3cm C) 1.5cm D)2.5cm

13. In ΔABC DE∥BC, DE=5cm ,BC=8cm and AD=3.5cm then the length of AE is…..

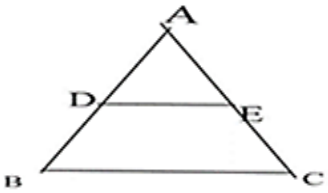


A)5.6cm B) 4.8cm C) 5.2cm D)6.4cm

14.ΔABC ~ ΔPQR, If $\frac{AB}{PQ} = \frac{AC}{PR}$ Then ∟C=…..

A) ∟P B) ∟Q C)∟R D)∟B

15. In ΔABC DEIIBC, If AD=3cm, BD=9cm and AC=18cm the measure of AE….



A) 4cm B) 4.5cm C)2.5cm D)5cm

16.Which of the following type of triangles are always similar?

A) Equivalent triangles B) Isosceles triangles

C) Scalene triangles D) Acute angled triangles

17. In two triangles ,angle of one triangle is equal to corresponding angle of the other triangle and the sides having the equal corresponding angles are in the same ratio, then two triangles are similar the above statement represents…..

A) SAS criteria of similarity of triangles

B) ASA criteria of similarity of triangles

C) AA criteria of similarity of triangles

D) None of the above

18.In a triangle, if square of one side is equal to the sum of squares of other two sides, then the angle opposite to the first side is a ……

A)Acute angle B) Right angle

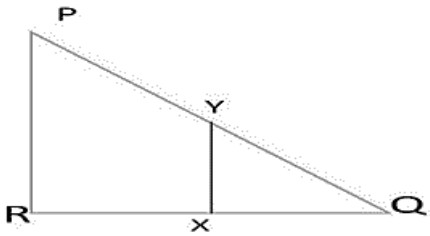
C)Obtuse angle D) none of the above

19.Identify the sides of a right angled triangle in the following set of numbers…

A) 5,6,8 B) 6,8,10 C) 4,5,6 D)9,10,12

20.In the figure XYIIPR then QR : QX=……

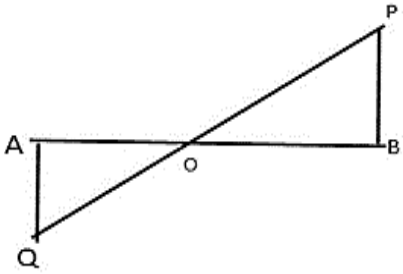
A)QP : YP B) QY : YP C) QP : QY D) QY : QP



21. In the figure QA and QB are perpendicular to AB, if AO=10cm

BO=6cm and PB=9cm then measure of AQ=

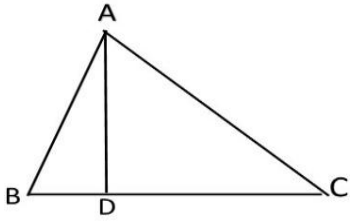
A)15cm B)25cm C)10cm D) None of the above



22. In the ΔABC , ∟BAC=90^0 and AD⊥BC, then correct statement from the following is……..

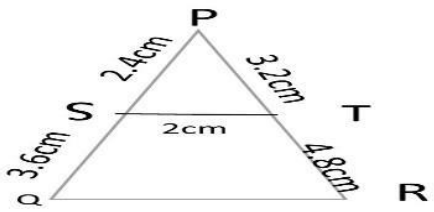
A) $BD.CD=BC^2$ B) $AB.AC=AC^2$

C) $BD.CD=AD^2$ D) $AB.AC=AD^2$



23. In the figure ,the value of QR…….

A) 4cm B) 5cm C)6cm D)8cm



24. If 2AB=DE and BC=8cm in similar triangles ΔABC and ΔDEF. then value of EF ….

A) 12cm B)4cm C)16cm D)8cm

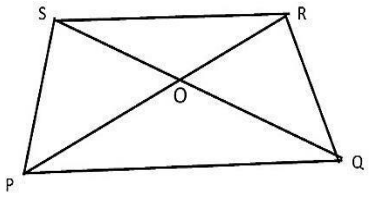
25. In ΔABC, AE= $\frac{1}{4}$AC , AB=6cm and DEIIBC,then value of AD = …….

A)2cm B)1.2cm C) 1.5cm D) 4cm

26.ΔABC ~Δ DEF , If AB=4cm, BC=3.5cm, CA=2.5cm and DF=7.5cm , the perimeter of ΔDEF is….

A)10cm B)14cm C)30cm D)25cm

27.The diagonals of the trapezium PQRS are intersecting each other at a point 'O'. If PQIIRS and PQ=3RS then the ratio of areas of Δ POQ and ΔROS is…….



A)1:9 B)9:1 C)3:1 D)1:3

28. In ΔABC , DEIIBC, If AD=x, DB=x-2, AE=x+2 and EC=x-1 then the value of x …..

A) 3 B) 4 C)5 D)3.5

29. If the perimeters of ΔABC and ΔPQR is 60cm and 36cm respectively and PQ=9cm,then the measure of AB is……..

A) 6cm B)10cm C)15cm D)24cm

30.The perimeters of two similar triangles are in the ratio 4:5, then the ratio of their corresponding areas is…..

A) 16:25 B) 2:5 C) 5:2 D) 25:16

A) 3 B) 6 C) -3 D) -6

A) One B) Two

C) No solution D) Infinite

3) In the equation x + y = 7, if x = 3 then the value of 'y' is,

A) -4 B) 4 C) 10 D) -10

co-efficients are

A) $\frac{a1}{a2} \neq \frac{b1}{b2}$ B) $\frac{a1}{a2} = \frac{b1}{b2} \neq \frac{c1}{c2}$

C) $\frac{a1}{a2} = \frac{b1}{b2} = \frac{c1}{c2}$ D) $\frac{a1}{a2} = \frac{b1}{b2}$

5) If the pair of equations 3x + 2ky = 2 and 2x + 5y + 1 = 0 are parallel, then the value of 'k' is

A) 15/4 B) 3/2

C) 5 D) 4/15

6) The pair of equations 2x – 5y + 4 = 0 and 2x + y – 8 = 0 has

A) Exactly two solutions B) Infinitely many solutions

C) A unique solution D) No solution

A) x = 0 , y = -3 B) x = 2, y = 3

C) x = 3, y = -2 D) x = -2, y = 3

D) A unique solution if they intersect

9) In the equation 2x – y = 5, if y = 1 then the value of 'x' is,

A) 3 B) 6 C) 1 D) 4

10) The cost of 5 pens and 7 pencils is Rs 50. Which of the following equation describes the above statement,

A) 5x / 7x = 50 B) 5x + 7y = 50

B) C) 5x * 7y = 50 D) 5x – 7y = 50

11) The solution of the equation x – y = 2 and x + y = 4 is

A) 4, 2 B) 1, 3 C) 3, 1 D) 1, 2

A) Intersects B) Parallel

C) Coincides D) None of the above

13) If the equations 4x + Py +8 = 0 and 2x + 2y + 2 = 0 have unique solution, then the value of 'P' is,

A) Except 2 B) Except 4

B) C) Except -2 D) Except -4

14) x + y = 20 and x – y = 4 solve for x and y, and substitute the values of x and y in y = mx + 3 then the value of 'm' is,

A) 5 / 12 B) 12/ 5

B) C) 8/12 D) – 5/ 12

15) The value of 'y' in the equations 2x + 3y = 12 and x + y = 5 is,

A) 3 B) 2 C) 4 D) 12

16) The value of ' x' in the equations 2x + y = 9 and 3x + y = 11 is,

A) 3 B) 1 C) 2 D) 11

18) The pair of equations 2x + y - 6 = 0 and 4x - 2y - 4 = 0 are examples for

A) Consistent with unique solution

B) consistent with infinitely many solutions

C) In consistent or not solvable

D) None of the above

19) In the equation x – y = 10, if x = 13 then the value of 'y' is,

A) -3 B) 23 C) 3 D) -23

representing these equations,

A) Coincides B) parallel

C) intersects D) inconsistent

representing these equations are,

A) Coincides B) parallel

C) intersects D) All of the above

$x + y = 5$ and $x – y = 8$

A) No solution B) Unique solution

C) infinitely many solutions D) None of the above

24) In the equation $2x + y = 11$ and $x + y = 8$ the values of 'x' and 'y' are respectively,

A) -3, 5 B) 2,5 C) 3, -5 D) 3,5

A) Coincident B) parallel

C) Intersecting at one point D) perpendicular to each other

26) The value of 'k' for which the system of equations $kx – y = 2$ and $6x – 2y = 3$ has unique solution is,

A) = 3 B) $\neq 3$ C) $\neq 0$ D) = 0

27) The value of 'k' for which the system of equations $2x + 3y = 5$ and $4x + ky = 10$ has infinite number of solutions,

A) 1 B) 3 C) 6 D) 0

28) The value of 'k' for which the system of equations $x + 2y – 3 = 0$ and $5x + ky + 7 = 0$ has no solution, is

A) 10 B) 6 C) 3 D) 1

29) The sum of two numbers is 9 and the second number is twice the first number, the equation representing the above statement is

A) $x + y = 9$, $2x = y$ B) $x – y = 9$, $2x = y$

C) $x + y = 9$, $x + 2y = 0$ D) $x + y = 9$, $x + y = 2$

A) parallel B) Intersects at (4, 5)

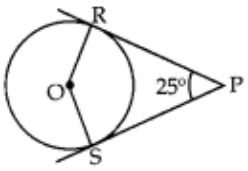
C) coincides D) Intersects at (5,4)

UNIT --- CIRCLES

---

1. The distance between two parallel tangents of a circle of radius 3 cm is

   (A) 2 cm (B) 4 cm (C) 6 cm (D) 8 cm



2. In the given figure, if ∠RPS = 25°, the value of ∠ROS is

   (A) 135° (B) 145° (C) 165° (D) 155°

3. A tangent is drawn from a point at a distance of 17 cm from centre to a circle of radius 8 cm. The length of its tangent is

   (A) 5 cm (B) 9 cm (C) 15 cm (D) 23 cm

4. The length of tangents drawn from an external point to the circle

   (A) are equal (B) are not equal (C) sometimes are equal (D) are not defined

5. Number of tangents drawn at a point on a circle is/are

   (A) one (B) two (C) none (D) infinite

6. The tangents drawn at the extremities of the diameter of a circle are

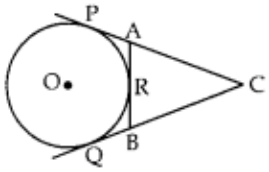
   (A) perpendicular (B) parallel (C) equal (D) none of these

7. Number of Tangents from an external point to a circle are

   (A) one (B) two (C) none (D) infinite

8. The length of a tangent drawn from a point at a distance of 10 cm of circle is 8 cm. The radius of the circle is

   (A) 4 cm (B) 5 cm (C) 6 cm (D) 7 cm

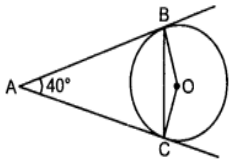


9. In given figure, CP and CQ are tangents to a circle with centre O. ARB is another tangent touching the circle at R. If CP = 11 cm and BC = 6 cm then the length of BR is

   (A) 6 cm (B) 5 cm (C) 4 cm (D) 3 cm

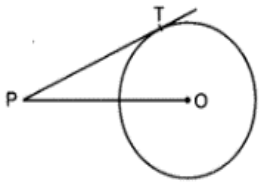
10. From a point P which is at a distance of 13 cm from the centre O of a circle of radius 5 cm, the pair of tangents PQ and PR to the circle are drawn. Then the area of the quadrilateral PQOR is

    (A) 60 cm² (B) 65 cm² (C) 30 cm² (D) 32.5 cm²



11. In the given figure, AB and AC are tangents to the circle with centre O such that ∠BAC = 40°, then ∠BOC is equal to

    (A) 40° (B) 50° (C) 140° (D) 150°



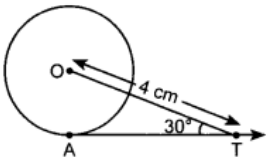
12. In the given figure, point P is 26 cm away from the centre O of a circle and the length PT of the tangent drawn from P to the circle is 24 cm. Then the radius of the circle is

    (A) 25 cm (B) 26 cm (C) 24 cm (D) 10 cm

16. From a point P which is at a distance of 13 cm from the centre O of a circle of radius 5 cm, the pair of tangents PQ and PR to the circle are drawn. Then the area of the quadrilateral PQOR is

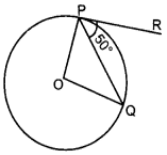
(A) 60 cm² (B) 65 cm² (C) 30 cm² (D) 32.5 cm²

17. In figure AT is a tangent to the circle with centre O such that OT = 4 cm and ∠OTA = 30°. Then AT is equal to



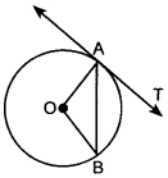
(A) 4 cm (B) 2 cm (C) 2√3 cm (D) 4√3 cm

18. In figure if O is centre of a circle, PQ is a chord and the tangent PR at P makes an angle of 50° with PQ, then ∠POQ is equal to



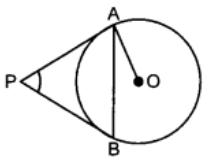
(A) 100° (B) 80° (C) 90° (D) 75°

19. In figure, O is the centre of a circle, AB is a chord and AT is the tangent at A. If ∠AOB = 100°, then ∠BAT is equal to



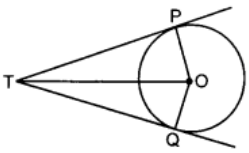
(A) 100° (B) 40° (C) 50° (D) 90°

20. In the figure PA and PB are tangents to the circle with centre O. If ∠APB = 60°, then ∠OAB is



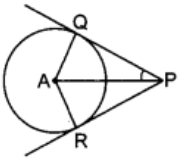
(A) 30° (B) 60° (C) 90° (D) 15°

21. In the given figure, TP and TQ are two tangents to a circle with centre O, such that ∠POQ = 110°. Then ∠PTQ is equal to



(A) 55° (B) 70° (C) 110° (D) 90°

22. In figure, PQ and PR are tangents to a circle with centre A. If ∠QPA=27°, then ∠QAR equals to



(A) 63° (B) 153° (C) 126° (D) 90°

23. In figure if PQR is the tangent to a circle at Q whose centre is O, AB is a chord parallel to PR and ∠BQR = 70°, then ∠AQB is equal to

(A) 20° (B) 40° (C) 35° (D) 45°

24. The common point of the tangent and the circle is called _____ .

(A) Point of contact (B) Centre (C) External point (D) Internal point

25. Two concentric circles are of radii 13 cm and 5 cm. The length of the chord of larger circle which touches the smaller circle is _____ .

(A) 20 cm (B) 24 cm c) 12 cm (D) 13 cm

26. A quadrilateral ABCD is drawn to circumscribe a circle. If AB =12 cm, BC = 15 cm and CD = 14 cm, then AD is equal to _____ .

(A) 12 cm (B) 15 cm (C) 14 cm (D) 11 cm

27. Number of tangents to a circle which are parallel to a secant is ____ .

(A) 2 (B) 1 (C) 0 (D) 3

(A) 20 cm (B) 24 cm (C) 7 cm (D) 14 cm

29. If the angle between two tangents drawn from an external point P to a circle of radius r and centre O, is 60°, then the angle between radii which are drawn from their point of contact is.

(A) 100° (B) 60° (C) 120° (D) 90°

30. Match the column:

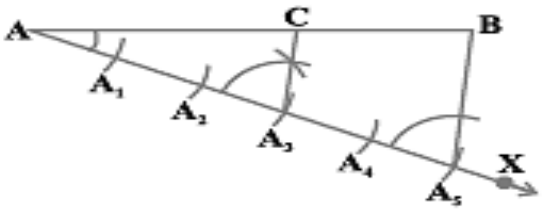
(1) The tangent at any point of a circle is …	(A) known as tangent to the circle
circle is …	

A. 3 : 2

B. 2 :3

C. 3 : 5

D. 5 : 3

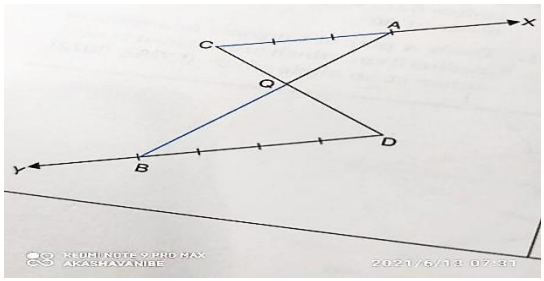


A. 2 : 3

B. 3 : 2

C. 3 : 4

D. 4 : 3



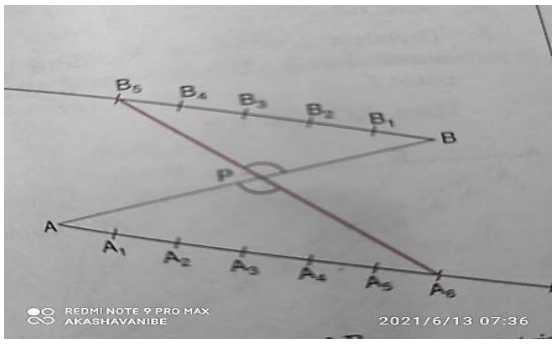
3) Observe figure and choose the correct statement?

A. AP / BP = BB_5 /AA_6

B. AB / BP = AA_6 /BB_5

C. BP / AP = AA_6 /BB_5

D. AP / BP = AA_6 /BB_5



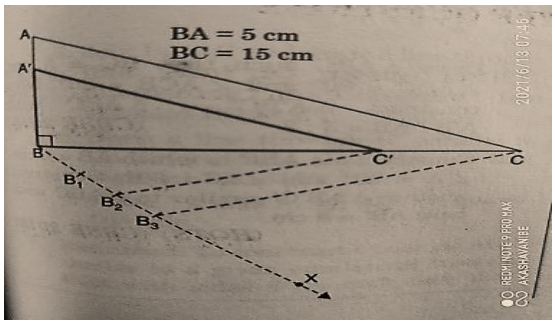
4) In Figure ,in which ratio A^I divides Line segment BA?

A. 2 : 1

B. 3 : 2

C. 4 : 3

D. 2 : 3



m ÷ n B) m x n C) m – n D) m + n

A) A_1,A_2,A_3,A_4,A_5 B) A_1,A_2,A_3 C) A_1,A_2 D) A_1,A_2,A_3,A_4,A_5,A_6

A) 3 : 3 B) 5: 4 C) 4 : 3 D) 4 : 4

A) 2: 3 B) 3 : 2. C) 3 : 5 D) 5 : 3

(AA_2/ AA_6) = (AC / AB), then AC : AB = ___

A) 2 : 4 B) 6 : 2 C) 2 : 6 D) 4 : 2

A) 3 : 2 B) 2 : 3 C) 1: 5 D) 5 : 1

A) PYTHAGORAS THEOREM B) BHOUDHAYANA THEOREM

C) THELE'S THEOREM D) NEWTON THEOREM

12) Δ ABC∼AB^lC^l, then ΔAB^lC^l is 5/2 times of similar sides of a given triangle ΔABC then AB : AB^l =……

A) 5 : 2 B) 2 : 5 C) 3 : 2 D) 2 : 3

13) Δ ABC∼AB^lC^l,then ΔAB^lC^l is 3/5 times of similar sides of a given triangle ΔABC then AB : BB^l =……

A) 2: 3 B) 5 : 2 C) 5 : 3 D) 3 : 5

14) ΔABC ∼ AB^lC^l.If Δ AB^lC^l is 5/2 times of corresponding sides of a given triangle then,

A) ΔABC ‖ ΔAB^lC^l C) ΔABC > ΔAB^lC^l

B) Δ ABC = ΔAB^lC^l D) ΔABC < ΔAB^lC^l

15) ΔABC ∼ AB^lC^l . If ΔAB^lC^l is 2/5 times of corresponding sides of a given triangle then,

A) ΔABC > ΔAB^lC^l C) ΔABC < ΔAB^lC^l

B) ΔABC = ΔAB^lC^l D) ΔABC ‖ Δ AB^lC^l

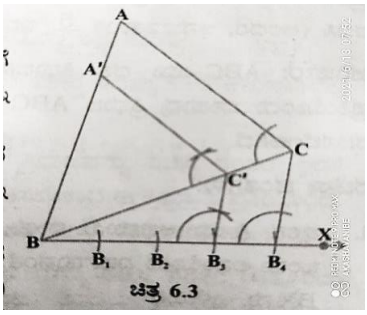
16) ΔABC ∼AB^lC^l and the ratio of corresponding sides of the triangles is 5:5 ,then the triangles ΔABC and ΔAB^lC^l are,

A) UNEQUAL TRIANGLES C) ISOSCELUS TRIANGLES

CONGRUENT TRIANGLES D) EQUILATRAL TRIANGLES

17) In fig. $\Delta ABC \sim \Delta A^{I}BC^{I}$,then ratio of two triangle ΔABC and $\Delta A^{I}BC^{I}$ is

A) 3/1 B) 1/3 C) 4/3 D) ¾



ಚಿತ್ರ 6.3

18) Tangents drawn to a circle at the end points of radii whose angle between them is 90^0 ,then the quadrilateral formed by tangents and radii is .....?

A) RECTANGLE B) SQUARE

B) C)TREPEZIUM D) DIAMOND

A) A_5 & B_5 B) A_3 & B_3 C) A_6& B_5 D) A_5 & B_6

A) A_5 B) A_6 C) A_7 D) A_8

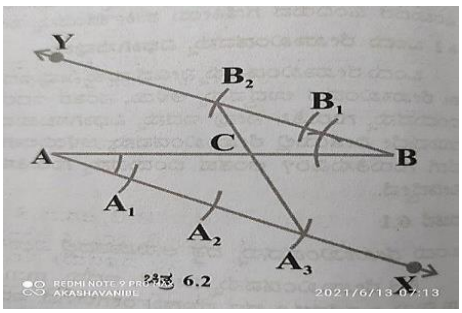
A) 2 B) 3 C) 7 D) 5

A)4 B) 11 C) 3 D) 7

AP= ____

A) 4 B) 3.5 C) 3 D) 7

A)5 : 2 B) 2 : 5 C) 2 : 3 D) 3 : 2



ಚಿತ್ರ 6.2

25) An equilateral ΔABC of side 5cm is drawn . A similar $\Delta AB^{I}C^{I}$ whose corresponding sides are of 3/2 times the ΔABC is drawn, then each side of $\Delta AB^{I}C^{I}$ is?

A) 5 cm B) 7 cm C) 7.5 cm D) 5.5 cm

A) 6cm B) 3cm C) 4.5cm D) 9cm

A) 5 : 13 B) 13 : 5 C) 5 : 8 D) 8 : 5

28) In a circle ,the angle formed between the radius and the tangent at point of tangent is _____?

A) 30° B) 45° C) 60° D) 90°

A) 30° B) 45° C) 60° D) 90°

30) The length of the tangent drawn to a circle of diameter 12cm from a point 10cm away from its center _____?

A) 8 cm B) 6 cm C) 10cm D) 2cm

A) 80° B) 40° C) 100° D) 160°

32) To a circle of radius 3cm , a tangent of 4cm is to be drawn, then distance between center and external point is_____ ?

A) 6 cm B) 5 cm C) 7 cm D) 8cm

33) An external point is 25cm away from the center of circle and 24cm away from tangential point. Then radius of circle is _____ ?

A) 7cm B) 14vm C) 21cm D) 28cm

34) In a circle of radius 5cm, angle between pair of tangents are twice of angle between the radii. Then angle between radii at the center is ___ ?

A) 30 B) 60° C) 45° D) 90°

35) In a circle of radius 5cm, angle between pair of tangents is half of angle between the radii. Then angle between radii at the center is ___ ?

A) 40° B) 80° C) 120° D) 160°

UNIT----CO-ORDINATE GEOMETRY

---

1) Co-ordinates of the origin among the following is _____.

A. (x, 0) B. (y, 0) C. (0, 0) D. (0, x)

2) Co-ordinates of a point on the X-axis are _____.

A. (x, 0) B. (0, y) C. (0, x) D. (y , 0)

3. Co-ordinates of a point on the y-axis are _____.

A. (x, 0) B. (y, 0) C. (0, y) D. (y , 0)

4. In a cartesian plane, the distance of a point from the Y-axis is called as _____.

A. X- co-ordinate B. abscissa C. Y- co-ordinate D. both A & B

5. In a Cartesian plane, the distance of a point from the X-axis is called as _____.

A. X- co-ordinate B. Y- co-ordinate C. ordinate D. both B & C

6. In an Cartesian plane the distance between the points $P(x_1 , y_1)$ and $Q(x_2 , y_2)$ is _____.

A. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ B. $d = \sqrt{(x_2 - x_1)^2 - (y_2 - y_1)^2}$

C. $d = \sqrt{(x_2 - x_1)^2 \pm (y_2 - y_1)^2}$ D. $d = (x_2 - x_1)^2 + (y_2 - y_1)^2$

7. In an Cartesian plane the distance between the origin and the point P(x , y) is _____.

A. $d = \sqrt{x^2 - y^2}$ B. $d = \sqrt{x^2 + y^2}$

C. $d = \sqrt{x^2 \pm y^2}$ D. $d = x^2 + y^2$

8. Distance between the origin and the point (4,3) is _____.

A. 9 units B. 16 units C. 25 units D. 5 units

9. Distance between the origin and the point (-2, -4) is _____.

A. $4\sqrt{5}$ units B. $2\sqrt{5}$ units C. $10\sqrt{2}$ units D. 20 units

10. Distance between the points (10, 5) and (4,13) is _____.

A. 25units B. 100units C. 10units D. $\sqrt{10}$ units

A. P(x , y) = $\left(\frac{m_1 x_2 + m_2 x_1}{m_1 + m_2} \ , \frac{m_1 y_2 + m_2 y_1}{m_1 + m_2}\right)$ B. P(x , y) = $\left(\frac{m_1 x_1 + m_2 y_2}{m_1 + m_2} \ , \frac{m_1 y_1 + m_2 x_2}{m_1 + m_2}\right)$

C. P(x , y) = $\left(\frac{m_1 x_2 + m_2 x_1}{m_1 - m_2} \ , \frac{m_1 y_2 + m_2 y_1}{m_1 - m_2}\right)$ D. P(x , y) = $\left(\frac{m_1 x_2 - m_2 x_1}{m_1 + m_2} \ , \frac{m_1 y_2 - m_2 y_1}{m_1 + m_2}\right)$

A. (12 , 18) B. (12, 9) C. (6 , 18) D. (6 , 9)

A. (18 , 6) B. (9 , 3) C. (18 , 10) D. (9 , 5)

A. $\frac{1}{2}[x_1 (y_2 - y_3) + x_2 (y_3 - y_1) + x_3 (y_1 - y_2)]$

B. $\frac{1}{2}[x_1 (y_1 - y_1) + x_2 (y_2 - y_2) + x_3 (y_3 - y_3)]$

C. $[x_1 (y_2 - y_3) + x_2 (y_3 - y_1) + x_3 (y_1 - y_2)]$

D. $[x_1 (y_1 - y_1) + x_2 (y_2 - y_2) + x_3 (y_3 - y_3)]$

15. When the area a triangle is 0(zero) units, then the vertices of the triangle will be _____.

C. Lies in the same quadrant D. Lies in different quadrants

'b' are equal to _____.

A. a = 4 and b = 6 B. a = -4 and b = -6

C. a = -4 and b = 6 D. a = 6 and b = 4

A. p = -5 and q = -3 B. p = -5 and q = 3

C. p = 3 and q = -5 D. p = 5 and q = -3

18. If the distance between the origin and the point P(x, 15) is 17units , the value of 'x' is _____.

A. ± 8 B. 64

C. – 64 D. $\sqrt{-\ 64}$

19. If the distance between the origin and the point P(5, K) is 13units , the value of 'k'is _____.

A. 12 B. 64

C. only A D. both A & B

20. When the distance between the points P(2,-3) and Q(10,y) is 10 units, the value of 'y' is _____.

A. 9 or 3 B. -9 or 3

C. 9 or -3 D. -9 or -3

A. (1 ,-3) B. (-1 , 3)

C. (1 , 3) D. (3 , 1)

22. If (7, 6) and (3, -2) are the end points of the diameter of a circle , the co-ordinates of the center of the circle are _____.

A. (-5 , 2) B. (5 , 2)

C. (10 , 4) D. (10 , 8)

A. 2 B. 3 C. 4 D. 1

A. 3 B. 2 C. $\frac{1}{2}$ D. 0

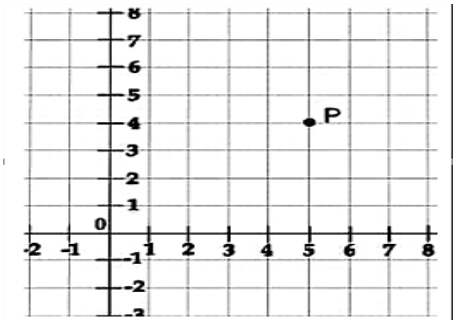
A. a = b B. b = 2a

C. a = 2b D. 1

26. The distance of the co-ordinate p(4,3) from the x-axis is_____.

A. 2units B.3units C. 4units D. 5units

27. Co-ordinates of the point "P" in the adjoining figure are _____.



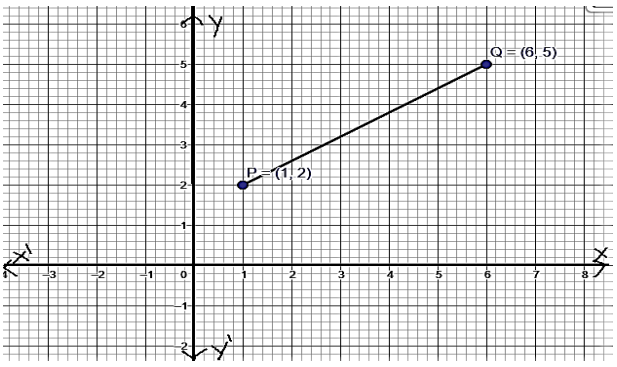
A. (4 , 5) B. (5 , -4)

C. (5 , 4) D. (-5 , 4)

A. (1 , 0) B. (-1 , 0)

C. (0 , 1) D. (0 , -1)

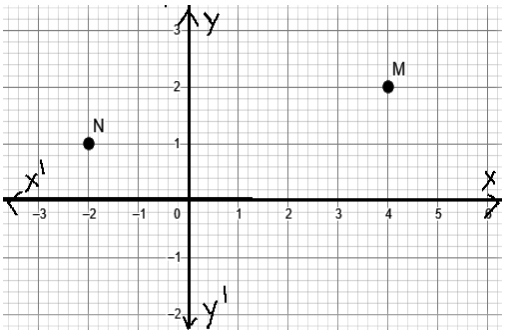
29. Distance between the points P and Q is_____.



A. $\sqrt{34}$ units B. $\sqrt{36}$ units

C. 4 units D. $7\sqrt{2}$ units

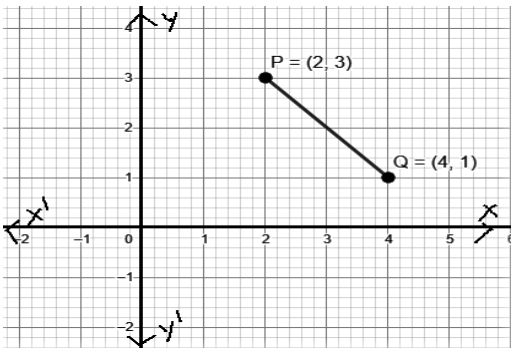
30. Distance between the points M and N is_____.



A. $\sqrt{35}$ units B. $\sqrt{37}$ units

C. 37 units D. $7\sqrt{2}$ units

31. Distance between the points P and Q is_____.



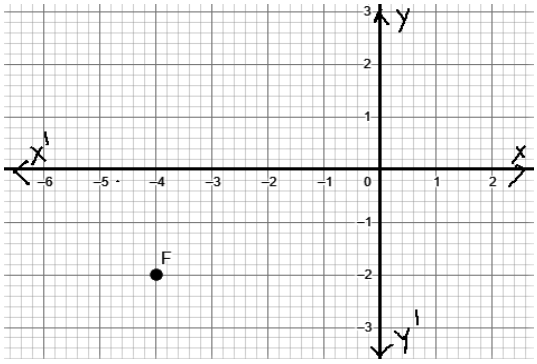
A. 8 units B. $2\sqrt{5}$ units

C. 52 units D. $2\sqrt{2}$ units

32. Distance of the co-ordinate F form the Y-axis is _____.

A. 2units B. 4units

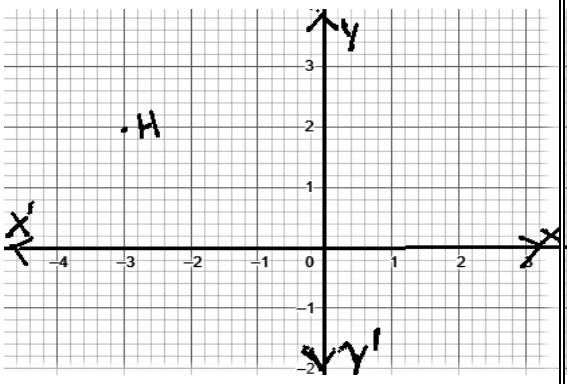
C. $2\sqrt{5}$ units D. $2\sqrt{2}$units



33. Co-ordinates of the point H are _____.

A. (-3,-2) B. (3, 2)

C. (-3, 2) D. (3, -2)



UNIT--- QUADRATIC EQUATIONS

1. The standard form of an adfected quadratic equation is……..

   A) $ax^2+bx+c=0$ B) $ax^2-bx+c=0$ C) $ax^2+bx-c=0$ D) $ax^2+c-bx=0$

2. The standard form of a quadratic equation $2x^2-3=7x$ is……

   A)$2x^2-3=7x$ B) $2x^2-3-7x=0$ C) $2x^2-7x-3=0$ D) $-2x^2-3+7x=0$

3. Which one of the following equation is not a quadratic equation?

   A)$3x^2+4x-7=0$ B) $m^2-5m-8=0$ C) $2b^2+b-6=0$ D) $0x^2-2x-9=0$

4. Which one of the following equation is a quadratic equation ?

   A)$4x^{-2}-6x+6=0$ B) $3x-8y=1$ C) $5x^3+5x-7=0$ D) $3x^2+9=7$

5. The highest power appearing in a quadratic equation $2x^2=4x-3$ is……

   A)1 B) 2 C) 3 D)4

6. The constant term in a quadratic equation $7x^2-4x=5$ is……..

   A)7 B) -4 C) 5 sD) -5

7. The polynomial equation $x(x+1)+8=(x+2)(x-2)$ is a …….equation.

   A)Linear equation C) Cubic equation

   B)Quadratic equation D) Simultaneous equation

8. The numerical co-efficients of quadratic equations $ax^2+bx+c=0$ are……

   A) Rational numbers C) Irrational numbers

   B) Integers D) Real numbers.

9. The number of values of y which satisfies the equation $3y^2=7y-3$ is……..

   A)1 B) 3 C) 7 D)2

10. Which one of the following value satisfies the equation $x^2-3x+2=0$?

    A)1 B) 3 C) -1 D) -3

11. The maximum number of roots of a quadratic equation $ax^2+bx+c=0$ is…….

    A)2 B) 3 C) 1 D) 4

12.The formula is used to calculate the roots of a quadratic equation $ax^2+bx+c=0$ is….

A) $\frac{-b\pm\sqrt{b^2}-4ac}{2a}$ B)-b$\pm\frac{\sqrt{b^2-4ac}}{2a}$ C) $\frac{-b\pm\sqrt{b^2+4ac}}{2a}$ D) $\frac{-b\pm\sqrt{b^2-4ac}}{2a}$

13.The roots of a quadratic equation $x^2+bx+c=0$ is given by ……

A)$\frac{-b\pm\sqrt{b^2}-4ac}{2a}$ B)-b$\pm\frac{\sqrt{b^2-4ac}}{2a}$ C)$\frac{-b\pm\sqrt{b^2-4ac}}{2a}$ D) $\frac{-b\pm\sqrt{b^2-4c}}{2}$

14.If (y-2) and (y+3) are the factors of the trinomial y^2+y-6 then the roots of a quadratic equation $y^2+y-6=0$ are ……and …..

A) -2+3 B) 2,-3 C)-2,-3 D) 2,3

15. If (x-1) is one the factor of x^2+px-3, then the value of p in $x^2+px-3=0$ is……

A) 2 B) -2 C) 3 D)-5

16. If-2 is the one of the roots of a quadratic equation $x^2+3x+2=0$ then the other root is..

A) 2 B) -1 C) +1 D) 3

17.The roots of a quadratic equation $m^2+m-12=0$ are …. and …….

A) 4, 3 B) 4,-3 C) -4,-3 D) -4,3

18.The values of x which satisfies the equation $6x^2-x-2=0$ are ----and ---

A) $\frac{2}{3},\frac{1}{2}$ B) $\frac{-2}{3},\frac{1}{2}$ C) $\frac{2}{3},\frac{-1}{2}$ D)$\frac{-2}{3},\frac{-1}{2}$

19. if one of the roots of a quadratic equation $x^2+px+12=0$ is 4 then the value of P is ..

A) -7 B) +7 C) -5 D) +5

20.Which one of the following quadratic equation has -2 and +5 as roots ?

A) $x^2-3x-10=0$ B) $x^2+3x-10=0$ C) $x^2-3x+10=0$ D) $x^2+3x+10=0$

21. 'b^2-4ac ' is called as the discriminant part of a quadratic equation $ax^2+bx+c=0$ because..

A) The value of b^2-4ac is describes the nature of roots

B) The value of b^2-4ac gives the roots of a equation

C) The value of b^2-4ac explains the type of a equation.

D) The value of b^2-4ac is describes the nature of an equation

22. In a quadratic equation $ax^2+bx+c=0$, If c=0 then the roots are ……. and …….

A) 0,$\frac{-b}{a}$ B) 0,$\frac{b}{a}$ C) a,$\frac{-b}{a}$ D) b,$\frac{-b}{a}$

23.For what condition, the roots of a quadratic equation $ax^2+bx+c=0$ are real, rational and distinct.

A) $b^2-4ac=0$ B) $b^2-4ac>0$ and perfect square

C) $b^2-4ac<0$ D) $b^2-4ac>0$ and non-perfect square

A) Rational and Equal B) Rational and Unequal

C) Irrational and Distinct D) Non-Real and Imaginary

25. For what condition of the discriminant of equation $ax^2+bx+c=0$,the roots are unequal and irrational.

A) $b^2-4ac=0$ B) $b^2-4ac>0$ and perfect square

C) $b^2-4ac<0$ D) $b^2-4ac>0$ and non-perfect square

26.The quadratic equation whose discriminant is p^2-4qr is …….

A) $px^2+qx+r=0$ C) $qx^2+px+r=0$

B) $px^2+rx+q=0$ D) $rx^2+qx+p=0$

27. The root of a equation $ax^2+c=-bx$ whose discriminant is zero is …..

A) $\frac{-b}{a}$ B) $\frac{-b}{2a}$ C) $\frac{b}{a}$ D) $\frac{b}{2a}$

28. The value of discriminant of a quadratic equation $2x^2=4x-3$ is…….

A) -8 B) 8 C) 40 D) -40

29. The nature of roots of a quadratic equation $2x^2=4x-3$, is……

A) Rational B) Irrational C) Real D) imaginary

30. If the roots of a quadratic equation are 4 and ½ then discriminant of that equation is….

A) zero B) Positive number C) Negative number D) None of these.

31. The discriminant of a quadratic equation having the roots 3/2 and ½ is …….

A) zero B) Perfect square C) Non-perfect square D) Negetive square.

32.The equation $9x^2+kx+4=0$ has two equal roots then the value of K is….

A) ±12 B) ±13 C) ±11 D) ±10

33. If the discriminant of a quadratic equation is 11 then the roots of that equation are…

A)Rational and unequal C) Irrational and unequal B) Rational and equal D) Irrational and Equal

34. If the discriminant of a quadratic equation is a perfect square, then the roots of a quadratic equation are ……

A) Real number B) Rational

C) Unequal D) All of these

35. If the discriminant of a quadratic equation is equal to zero then the roots of a quadratic equation are ……

A) Real and Distinct B) Rational and Distinct

C) Real and Equal D) Irrational and Distinct

36.The natures of solutions of a quadratic equation $4x^2+2x+8=0$ are ……..

A) Real and Distinct B) Non-Real and Distinct

C) Real and Equal D) Irrational and Distinct

37. The discriminant of a quadratic equation $3x^2+8x-2=o$ is …….

A) 40 B) 68 C)88 D)30

38 .The discriminant of a quadratic equation $x^2+bx+c=o$ is …….

A) b^2-4ac B) b^2-4c C) $b-4ac$ D) b^2-4a

39. In a equation $ax^2+bx+c=o$, If $b^2-4ac > 0$ then the roots of quadratic equation are…

A) Real and Distinct B) Rational and Distinct

C) Irrational and Distinct D) all of the these

A) $b^2-4ac > 0$ B) $b^2-4ac < 0$ C) $b^2-4ac = 0$ D) None of these.

41. In a equation $ax^2+bx+c=o$, If $b^2-4ac = 0$ then the roots of quadratic equation are…….

A) Real B) Rational C) Equal D) All of these

UNIT--- TRIGONOMETRY

---

1. $\sin\theta$ =----------

A) $\frac{\text{adj}}{\text{hyp}}$ B) $\frac{\text{0pp}}{\text{hyp}}$ C) $\frac{\text{0pp}}{\text{adj}}$ D) $\frac{\text{adj}}{\text{opp}}$

2. If 13cosθ=5 , then tanθ=----------

A) $\frac{5}{13}$ B) $\frac{13}{5}$ C) $\frac{5}{12}$ D) $\frac{12}{5}$

3. If cosecθ=$\frac{13}{5}$, then $\frac{5}{13}$ =----------

A) sinθ B) cosθ C) tanθ D) secθ

4. If tanθ=$\frac{3}{4}$, then sinθ+cosθ----------

A) $\frac{9}{5}$ B) $\frac{5}{9}$ C) $\frac{9}{5}$ D) $\frac{5}{9}$

5. Reciprocal of secθ is ----------

A) sinθ B) cosθ C) tanθ D)cosecθ

6. $\sin45^0$=----------

A) $\frac{1}{2}$ B) $\frac{1}{\sqrt{2}}$ C) $\sqrt{2}$ D) 2

7. $\sin30^0$ is equal to---------

A) $\cos60^0$ B)$\cos30^0$ C)$\sin60^0$ D)$\tan30^0$

8. $\sin30^0$+$\cos60^0$=----------

A) $\frac{1}{2}$ B) 1 C) $\frac{1}{4}$ D) 2

9.The value of $\frac{\tan65^0}{\cot25^0}$ is----------

A) $\sqrt{2}$ B)0 C) 1 D) $\frac{1}{\sqrt{2}}$

10. The Value of $\cos48^0$- $\sin42^0$ is----------

A) $\frac{1}{2}$ B)0 C)1 D) $\frac{1}{\sqrt{2}}$

11. The value of $\cos^2 17^0$- $\sin^2 73^0$is----------

A) 1 B) $\frac{1}{3}$ C) 0 D)-1

12. The value of $\frac{\cos37^0}{\sin53^0}$ is----------

A)0 B)1 C)2 D)3

13. The value of $\frac{\text{cosec}32^0}{\sec58^0}$ is--------

A) 1 B) 0 C) $\frac{1}{2}$ D) 2

14. $\sin(90-20)^0$is ---------

A) $\sin20^0$ B) $\cos20^0$ C)$\cos70^0$ D)$\sin90^0$

13. complimentary angle of secθ is----------

A) cosθ B)sinθ

C)cosecθ D)secθ

14. The value of $\cos^2 17^0 - \sin^2 73^0$ is ---------

A) 0 B) 1

C)2 D)3

15. In triangle ABC angle B is right angle and angle c is θ then sin(90-θ) $= - - -$

A) $\frac{AB}{AC}$ B) $\frac{BC}{AC}$

C) $\frac{BC}{AB}$ D) $\frac{AB}{Bc}$

16. In the following which of the following is not true----------

A) $\sin^2\theta^0+\cos^2\theta^0=1$ B) $\sin\theta=\sqrt{1-\cos^2\theta}$

C) $\sin\theta=\sqrt{1+\cos^2\theta}$ D) $\cos\theta=\sqrt{1-\sin^2\theta}$

A)$1+\cot^2\theta^0=\text{cosec}^2\theta^0$ B) $1+\tan^2\theta^0=\sec^2\theta^0$

C) $\cot^2\theta^0+\tan^2\theta^0=1$ D) $\cot^2\theta^0-\tan^2\theta^0=1$

A)$1+\cot^2\theta^0=\text{cosec}^2\theta^0$ B) $1+\tan^2\theta^0=\sec^2\theta^0$

C) $\cot^2\theta^0+\tan^2\theta^0=1$ D) $\cot^2\theta^0-\tan^2\theta^0=1$

19.$(\sin\theta+\cos\theta)^2$=----------

A)1+2sinθcosθ B) 1-2sinθcosθ

C) 1+sinθcosθ D) 1+sinθcosθ

20. If 3tanθ =$\sqrt{3}$ then θ=---------

A) 45^0 B) 30^0

C) 60^0 D) 90^0

21. $\sin^2 60^0$=---------

A) $\frac{3}{4}$ B) $\frac{4}{3}$

C) $\frac{\sqrt{3}}{2}$ D) $\frac{2}{\sqrt{3}}$

22. which of the following is equal to $\text{cosec}60^0$--------

A)$\sin 60^0$ B)$\sec 60^0$

C) $\sec 30^0$ D)$\cos 30^0$

23. $\sin^2 45^0 x \cos^2 45^0$=-----

A) $\frac{1}{4}$ B) $\frac{1}{2}$

C) $\frac{1}{\sqrt{2}}$ D) 4

24. If sec4A =cosec(A-20^0) and 4A is acute ,then the value of A is-------

A) 32^0 B) 70^0 C) 22^0 D) 42^0

25. $\sin 20^0 \sec 70^0 + \cos 25^0 \operatorname{cosec} 65^0$=----------

A)0 B)1 C)4 D) 2

26. In the following which of the following are both complementary and reciprocal to each other ?---------

A) $\tan\theta$ and $\cot\theta$ B) $\sin\theta$ and $\cos\theta$

C) $\sin\theta$ and $\operatorname{cosec}\theta$ D) $\sec\theta$ and $\operatorname{cosec}\theta$

27) $\frac{1+\tan^2 A^0}{1+\cot^2 A^0}$ = ----

A) $\sec^2 A^0$ B) $\operatorname{cosec}^2 A^0$

C) $\tan^2 A^0$ D) $\cot^2 A^0$

28) $9\sec^2 A^0 - 9\tan^2 A^0 = ---$

A) 9 B)0 C) 1 D)-9

29. $\frac{1+\tan^2 45^0}{1-\cot^2 45^0}$=----------

A) 0 B)N.D. C) 1 D) 2

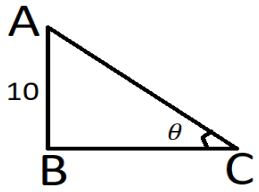
30.For which value this is true? Sin2A=2sinA

A) 0^0 B) 35^0 C) 45^0 D) 60^0

UNIT --- APPLICATIONS OF TRIGONOMETRY

---

1. In the figure AB and BC are 10 units θ is ----------



A) 30^0 B) 45^0 C) 60^0 D) 90^0

A) 10m. B) 5m C)15m D)20m

3. If the ratio of the height of the tower and the length of its shadow is $\sqrt{3}$:1 , what is an angle of elevation----------

A) 30^0 B) 45^0 C) 60^0 D) 90^0

4. A ladder whose length is 20m is stretched the wall at the height of 10m . what is an angle made by the ladder with the ground? To solve this which of the following ratio is correct.

A)tanθ B) sinθ C) cosθ D) cotθ

5. From a point on the ground, 20m away from the foot of a vehicle tower, the angle of elevation of the top of the tower is 60^0 what is the height of the tower ?

A)$20\sqrt{3}$ B) $20\sqrt{2}$ C)$3\sqrt{20}$ D) $\sqrt{10}$

A) 300m B) 100m C) 200m D) 500m

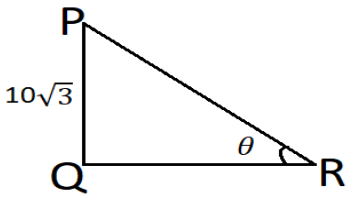
A) Vertical angle B) Angle of depression C) Angle of elevation D) Obtuse angle

A)Vertical angle B) Angle of depression C) Angle of elevation D) Obtuse angle

9. If a ratio of a vertical pole and its shadow is (1:$\sqrt{3}$) ,then the angle of elevation to the sun is—

A) 30^0 B) 45^0 C) 60^0 D) 90^0

10. In this figure QR=10 ,then θ is ----------



A) 30^0 B) 45^0 C) 60^0 D) 90^0

UNIT--STATISTICS

---

1. Mean of the first five natural numbers is

A. 2 B. 3 C. 5 D. 15

2. If the mean of the data x+3, 2x+6 is 15, then the value of x is

A. 3 B. 0 C. 7 D. 9

3. The runs scored by a batsman in 10 matches of a series is given here. 60,25,36,54,85,62,95,18,29,75 mean of these scores is

A. 53.9 B. 62.3 C. 58.5 D. 63.8

4. Median of first 6 prime numbers is

A. 6 B. 7 C. 5 D. 6.5

5. When n is an odd number, --------- score is the median

A. n - 1/2 B. n/2 C. n+1/2 D. n

6. A student scored 65 marks in I language, 50 marks in Science, 55 marks in Social Science and some marks in Mathematics. If the average marks scored by him in all the four subjects is 60, then the marks scored by him in Mathematics is

A. 65 B. 60 C. 50 D. 70

7. The empherical relation between the three " central tendencies " is

A. 3median = mode + 2mean B. 2Mean = mode + 3median

C. 2median = 2mode + 3mean D. Mode = 3mean – median

8. In the given frequency distribution table , the median class is :

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	5	8	12	15	20

A. 10 - 20 B. 20 - 30 C. 30 - 40 D. 0 – 10

9. When the mean is 3.3 and median is 2.4, ------- is the Mode of a data

A. 0.4 B. 0.5 C. 0.6 D. 0.7

10. If the mean of data 8,12,21,42,x is 20,then the value of 'x' is

A. 8 B.20 C. 21 D. 17

11. If the mean and median of some data is 19 and 40 respectively, then their mode is

A. 86 B. 75 C. 30 D. 82

12. Median of 48,50,52,54,56,58,60,62,64 is

A. 56 B. 48 C. 64 D. 50

13. Mode of the scores 9,7,11,6,11,23,24 is

A. 9 B. 7 C. 11 D. 23

14. Formula to find the mode of a grouped data is

A. $\frac{\sum fixi}{\sum fi}$ B. L + $[\frac{\frac{n}{2}-Cf}{f}]\times h$

C. L+$[\frac{f1-f0}{2f1-f0-f2}]\times h$ D. All above

15. More than ogive and less than ogive of a grouped data meet at the point (30,45), then their median is

A. 75 B. 15 C. 30 D. 45

16. If AM of a, a+3, a+6, a+9 and a+12 is 10, then 'a' is equal to

A. 1 B. 2 C. 3 D. 4

17. If the mean of first n natural numbers is 3n/5, then the value of n is

A. 3 B. 4 C. 5 D. 6

18. If the mean of frequency distribution is 7.5 and ∑fi.xi = 120 + 3k, ∑fi = 30, then k is equal to

A . 40 B. 35 C. 50 D. 45

19. If the sum of frequencies is 24, then the value of x in the obsevation: x,5,6,1,2 will be

A. 4 B. 6 C. 8 D. 10

20. If the mean and ∑x of a data is 20 and 400 respectively then the number of scores in that data is

A.10 B. 20 C. 40 D. 1600

21. Lower limit of the class interval where the mode is present, in the following frequency distribution , is

Class Interval	0 - 10	10 – 20	20 - 30	30 - 40
Frequency	3	7	4	2

A. 0 B. 10 C. 20 D. 30

22. Cumulative frequency list helps to get the following

A. Mean B. Median

C. Mode D. Midpoint.

23. The graph representing upper limit on x-axis & corresponding cumulative frequencies on y-axis is

A. less than type ogive B. More than type ogive

C. Pi-chart D. Histogram.

24. Cumulative frequency curve is also called

A. Histogram B. Ogive

C. Bar graph D. Median

25. The median of set of 9 distinct observations is 20.5. If each of the largest 4 observations of the set is increased by 2, then the median of the new set,

A. is increased by 2 B. Is decreased by 2

C. Is two times of the original number D. Remains the same as that of the original set.

26. Mean of 100 items is 49. It was discovered that ,three items which should have been 60, 70,80 were wrongly read as 40,20,50 respectively. The correct mean is,

A. 48 B. 49 C. 50 D. 60

A. 15 B. 20 C. 25 D. 40

A. 2,2,2,2,4 B. 1,3,3,3,5

C. 1,1,2,5,6 D. 1,1,1,2,5

29. Median of the scores 5,3,14,16,19,20 is

A. 14 B. 16 C. 20 D. 15

30. Mean of the following data is

Class Interval	5 - 15	15 - 25	25 - 35	35 - 45	45 - 55
Frequency	4	3	6	5	2

A. 25 B. 29 C. 30 D. 35

UNIT--- SURFACE AREA AND VOLUME

---

1. The curved surface area of a solid cylinder of radius 'r' cm and height 'h' cm is

A) $2\pi r(r+h)$ sq .cm. B) $2\pi rh$ sq. cm.

C) πrl sq .cm. D) πr^2 sq. cm.

2 . The formula to find total surface area of a cylinder having height "h" and radius " r" is

A) $2\pi r(r+h)$ B) $2\pi rh$ C) πrl D) πr^2

3. The formula to find volume of cylinder having height "h" and radius " r"

A) $2\pi r(r+h)$ B) $2\pi rh$ C) $1/3\ \pi r^2h$ D) πr^2h

4) The formula to find curved surface area of cone having slant height " l " and radius " r" is

A) $\pi r(r+h)$ B) $2\pi rh$ C) πrl D) $\pi r(r+l)$

5) The formula to find total surface area of cone having slant height " l " and radius " r" is

A) $\pi r(r+h)$ B) $2\pi rh$ C) πrl D) $\pi r(r+l)$

6) The formula to find volume of cone having height "h" and radius " r" is

A) $4\pi r^2$ B) $2\pi rh$ C) $1/3\ \pi r^2h$ D) πr^2h

7) The formula to find curved surface area of hemisphere having radius " r" is

A) πr^2 B) $2\pi r^2$ C) $3\ \pi r^2$ D) $4\pi r^2$

8) The formula to find total surface area of hemisphere having radius " r" is

A) πr^2 B) $2\pi r^2$ C) $3\ \pi r^2$ D) $4\pi r^2$

9) The formula to find volume of hemisphere having radius " r" is

A) $3\pi r^2$ B) $4/3\ \pi r^3$ C) $2/3\ \pi r^3$ D) πr^2h

10) The formula to find curved surface area of sphere having radius " r" is

A) πr^2 B) $2\pi r^2$ C) $3\ \pi r^2$ D) $4\pi r^2$

11) The formula to find total surface area of a sphere having radius " r" is

A) πr^2 B) $2\pi r^2$ C) $3\ \pi r^2$ D) $4\pi r^2$

12) The formula to find volume of sphere having radius " r" is

A) $4\pi r^2$ B) $4/3\ \pi r^3$

C) $2/3\ \pi r^3$ D) $\pi r^2 h$

13) The formula to find curved surface area of frustum of a cone having slant height "l" and radius " r"is

A) $\pi(r_1+r_2)\ l$ B) $\pi(r_1+r_2)\ l + \pi\ r_1^2 + \pi r_2^2$

C) πrl D) $\pi r\ (r+l)$

14) The formula to find total surface area of frustum of a cone having slant height "l" and radius " r" is

A) $\pi(r_1+r_2)\ l$ B) $\pi(r_1+r_2)\ l + \pi\ r_1^2 + \pi r_2^2$

C) πrl D) $\pi r\ (r+l)$

15) The formula to find volume of frustrum of a cone having height "h" and radius " r" is

A) $\pi(r_1+r_2)\ l$ B) $\pi(r_1+r_2)\ l + \pi\ r_1^2 + \pi r_2^2$

C) $\pi r^2 h$ D) $1/3\pi\ h(\ r_1^2 + r_2^2 + r_1 r_2)$

16) The relationship between radius "r" and height "h" and slant height " l " of a cone

A) $l^2 = r^2 + h^2$ B) $r^2 = l^2 + h^2$

C) $l^2 = r^2 - h^2$ D) $h = r^2 + l^2$

17) The surface area of a sphere is 616 sq.m. The surface area of its hemisphere is

A) 205.6 cm^2 B) 308 cm^2

C) 1232 cm^2 D) 38 cm^2

18) The surface area of a sphere is 2464 sq.m. The surface area of its hemisphere is

A) 205.6 cm^2 B) 308 cm^2

C) 1232 cm^2 D) 38 cm^2

19) The perimeter of the base of a right circular cylinder is 44 cm and its height is 10 cm. Then its volume is

A) 490 π cm^3 B) 440 π cm^3

C) 374 π cm^3 D) 980 π cm^3

20) Prepare a cone from " model clay". When wet, cut it with a knife parallel to its base, remove the smaller cone obtained. The solid left is

A) Cylinder B) Cone

C) Sphere D) Frustrum of a cone

21) The perimeter of the base of a right circular cylinder is 44 cm and its height is 10 cm. Then its lateral surface area is

A) 490 cm^2 B) 440 cm^2

C) 374 cm^2 D) 220 cm^2

22) The volume of a cylinder is 300m^3. Then the volume of a cone having the same radius and height as that of the cylinder is,

A) 900 m^3 B) 600 m^3

C) 150 m^3 D) 100 m^3

23) The surface area of a sphere of radius 7 cm is,

A) 154 cm^2 B) 308 cm^2

C) 616 cm^2 D) 770 cm^2

24) The curved surface area of a hemisphere of radius 14 cm ,

A) 1232 cm^2 B) 308 cm^2

C) 616 cm^2 D) 2464 cm^2

25) If the volume of a cone is 300 m^3 then the volume of a cylinder having same radius and same height as that of cylinder is

A) 900 m^3 B) 600 m^3

C) 150 m^3 D) 100 m^3

26) A funnel is combination of frustrum of cone and

A) Hemisphere B) Cylinder

C) Sphere D) Cone

27) The surface area of a sphere is 616 cm^2 .Its radius is

A) 7 cm B) 14 cm C) 21 cm D) 28 cm

28) If two solid hemispheres of same radius are joined together along their bases. The surface area of this new solid is

A) $3\pi r^2$ B) $4\pi r^2$ C) $5\pi r^2$ D) $6\pi r^2$

29) A cylinder and cone are of same base, radius and height. Then the ratio of their volume is

A) 2:1 B) 3:1 C) 2:3 D) 3:2

30) A solid has been melted and recast into a wire. Which of the following remains same.

A) Length B) Volume C) Radius D) Height

31) The curved surface area of a frustrum of a cone having slant height 4 cm and radii of its circular bases $9/\pi$ cm and $3/\pi$ cm is

A) 200π cm^2 B) 192 cm^2

C) 96 cm^2 D) 48 cm^2

32) The slant height of a cone having radius 5cm and height 12 cm is

A) 6 cm B) 9 cm C) 11 cm D) 13 cm

33) A drinking glass is in the shape of a frustrum of a cone of height 6cm. The radii of its two circular bases are 2cm and 1cm . The capacity of the glass is

A) 22 cm^3 B) 44 cm^3

C) 88 cm^3 D) 100 cm^3

****