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WORK SHEET
SUBJECT- MATHS
CHAPTER- 1 NUMBER SYSTEM

Class – IX

1. Which of the following is a rational number?

(a) $1+\sqrt{3}$ (b) π (c) $2\sqrt{3}$ (d) 0

2. Every point on a number line represents

(a) a rational number (b) a natural number

(c) an irrational number (d) a unique number

3. The decimal representation of a rational number is

(a) always terminating (b) either terminating or repeating

(c) either terminating or non repeating (d) neither terminating nor repeating

4. The decimal expansion of $\sqrt{2}$ is

(a) finite decimal (b) 1.4121

(c) non terminating recurring (d) neither terminating nor recurring

5. How many digits are there in the repeating block of digits in the decimal expansion of $\frac{17}{7}$?

(a) 16 (b) 6 (c) 26 (d) 7

6. Which of the following is a true statement?

(a) the sum of two irrational numbers is an irrational number. (b) the product of two irrational numbers is an irrational number.

(c) every real number is always rational. (d) every real number is either rational or irrational.

7. The sum of $0.\overline{3}$ and $0.\overline{4}$ is

(a) $\frac{7}{10}$ (b) $\frac{7}{9}$ (c) $\frac{7}{11}$ (d) $\frac{7}{99}$

8. The value of $\frac{4\sqrt{12}}{12\sqrt{27}}$ is

(a) $\frac{1}{9}$ (b) $\frac{2}{9}$ (c) $\frac{4}{9}$ (d) $\frac{8}{9}$

9. On rationalising the denominator of $\frac{\sqrt{5}+2}{\sqrt{5}-2}$, we will get:

(a) $(\sqrt{5}+2)^2$ (b) $(\sqrt{5})^2-(\sqrt{2})^2$ (c) $(\sqrt{5}-2)^2$ (d) 3

10. For any two whole numbers a and m, if $(-a)^m = -a^m$, then m is

(a) 0 (b) an odd number (c) a negative number (d) an even number

11. What must be the relationship between numbers x and y for which $2^x = 3^y$:

(a) $x \neq y$ (b) $x = y = 0$ (c) $x = y \neq 0$ (d) $x = 3$ and $y = 2$

12. The product of two irrational numbers is

(a) always irrational (b) always rational

(c) always an integer (d) sometimes rational and sometimes irrational

13. The value of $\frac{\sqrt{32}+\sqrt{48}}{\sqrt{8}+\sqrt{12}}$ is

(a) $\sqrt{2}$ (b) 2 (c) 4 (d) 8

14. Simplified value of $(16)^{-\frac{1}{4}} \times \sqrt[4]{16}$ is

(a) 25 (b) 3 (c) 1 (d) 5

15. There is a number x such that x^2 is irrational but x^4 is rational. Then, x can be

(a) $\sqrt{5}$ (b) $\sqrt{2}$ (c) $\sqrt[3]{2}$ (d) $\sqrt[4]{2}$

16. If $x = \frac{\sqrt{7}}{5}$ and $\frac{5}{x} = p\sqrt{7}$ then the value of p is

(a) $\frac{7}{25}$ (b) $\frac{25}{7}$ (c) $\frac{7}{15}$ (d) $\frac{15}{7}$

17. The value of $\sqrt{p^{-1}q}.\sqrt{q^{-1}r}.\sqrt{r^{-1}p}$ is

(a) -1 (b) 0 (c) 1 (d) 2

18. The value of $\sqrt[3]{2} \times \sqrt[4]{2} \times \sqrt[12]{32}$ is

(a) 25 (b) 3 (c) 1 (d) 5

19. If $\left(\frac{2}{3}\right)^x \left(\frac{3}{2}\right)^x = \frac{81}{16}$, then the value of x will be

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

20. On simplification, the expression $\frac{5^{n+2} - 6 \times 5^{n+1}}{13 \times 5^{n} - 2\times 5^{n+1}}$equals

(a) $\frac{5}{3}$ (b) $-\frac{5}{3}$ (c) $\frac{3}{5}$ (d) $-\frac{3}{5}$

21. If $x = 2 + \sqrt{3}$, then $\left(x + \frac{1}{x}\right)$ equals

(a) $-2\sqrt{3}$ (b) 2 (c) 4 (d) 0

22. The value of $\sqrt{3 - 2\sqrt{2}}$ is

(a) $\sqrt{3} + \sqrt{2}$ (b) $\sqrt{3} - \sqrt{2}$ (c) $\sqrt{2} + 1$ (d) $\sqrt{2} - 1$

23. If $x = 3 + \sqrt{8}$, then $x^2 + \frac{1}{x^2} =?$

(a) 34 (b) 56 (c) 28 (d) 63

24. If m and n are two natural numbers and $m^n = 32$, then n^{mn} is

(a) 5^2 (b) 5^3 (c) 5^{10} (d) 5^{12}

25. The arrangement of $\sqrt{2}, \sqrt{5}, \sqrt{3}$ in ascending order is

(a) $\sqrt{2}, \sqrt{3}, \sqrt{5}$ (b) $\sqrt{2}, \sqrt{5}, \sqrt{3}$ (c) $\sqrt{5}, \sqrt{3}, \sqrt{2}$ (d) $\sqrt{3}, \sqrt{2}, \sqrt{5}$

26. Decimal expansion of a rational number is terminating if in its denominator there is:

(a) 2 or 5 (b) 3or5 (c) 9or11 (d) 3 or 7

Ch. 2. POLYNOMIALS

1. In $2 + x + x^2$the coefficient of $x^2$is:

(a) 2 (b) 1 (c) -2 (d) -1

2. The degree of 5t – 7is:

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

3. The value of $p(x) = 5x - 4x^2 + 3$ for $x = 0$is:

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

4. The zero of $p(x) = 9x + 4$is:

(a) $\frac{4}{9}$ (b) $\frac{9}{4}$ (c) $-\frac{4}{9}$ (d) $-\frac{9}{4}$

5. On dividing $x^3 + 3x^2 + 3x + 1$by x we get remainder:

(a) 1 (b) 0 (c) -1 (d) 2

6. On dividing $x^3 + 3x^2 + 3x + 1$by $5 + 2x$ we get remainder:

(a) $\frac{8}{27}$ (b) $\frac{27}{8}$ (c) $-\frac{8}{27}$ (d) $-\frac{27}{8}$

7. If $x - 2$is a factor of $x^3 - 3x + 5a$ then the value of $a$is:

(a)1 (b)–1 (c) $\frac{2}{5}$ (d) $-\frac{2}{5}$

8. $(x + 8)(x - 10)$in the expanded form is:

(a)$x^2 - 8x - 80$ (b) $x^2 - 2x - 80$ (c) $x^2 + 2x + 80$ (d) $x^2 - 2x + 80$

9. The value of $95 \times 96$is:

(a)9020 (b)9120 (c)9320 (d)9340

10. The value of $104 \times 96$is:

(a)9984 (b)9624 (c)9980 (d)9986

11. Without actual calculating the cubes the value of $28^3 + (-15)^3 + (-13)^3$is:

(a)16380 (b)–16380 (c)15380 (d)–15380

12. If $x + y + z = 0$ then $x^3 + y^3 + z^3$is equal to

(a) $3xyz$ (b)$-3xyz$ (c)xy (d)$-2xy$

13. The factors of $x^3 - 2x^2 - x + 2$are:

(a) $(x - 1)(x - 1)(x - 5)$ (b) $(x + 1)(x + 1)(x + 5)$ (c) $(x + 1)(x - 1)(x + 5)$ (d) $(x + 1)(x + 1)(x - 5)$

14. Which of the following is not a polynomial?

(a) $x^2 + 2x + 3$ (b) $x^2 + 2x + 6$ (c) $x^3 + 3x^2 - 3$ (d) $6x + 4$

15. If $x + y + 2 = 0$, then $x^3 + y^3 + 8$equals

(a) $(x + y + 2)^3$ (b)0 (c)$6xy$ (d)$-6xy$

16. If$2(a^2 + b^2) = (a + b)^2$,then

(a) $a + b = 0$ (b) $a = b$ (c) $2a = b$ (d) $ab = 0$

17. If $a + b = -1$, then the value of $a^3 + b^3 - 3ab$ is

(a)-1 (b)1 (c)26 (d)-26

18. The value of $(2 - a)^3 + (2 - b)^3 + (2 - c)^3 + 3(2 - a)(2 - b)(2 - c)$, when $a + b + c = 6$ is

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

19. Zero of the zero polynomial is

(a) 0 (b) 1 (c) every real number (d) not defined

20. Degree of the zero polynomial is

(a) 0 (b) 1 (c) not defined (d) none of these.

21. If $(x^{51} + 51)$ is divided by $(x + 1)$, then the remainder is

(a) 0 (b) 1 (c) 49 (d) 50

22. If $(x + 2)$ and $(x - 1)$ are factors of the polynomial $p(x) = x^3 + 10x^2 + mx + n$, then

(a) $m = 5, n = -3$ (b) $m = 7, n = -18$ (c) $m = 17, n = -8$ (d) $m = 23, n = -19$

23. For the numbers $-5, 0, 6$ and 15, which of the following is not true?

(a) Each given number is a polynomial. (b) Each given number represents a constant polynomial.

(c) Zero is called the zero polynomial. (d) Zero is not a polynomial.

24. $\sqrt{y} - 7$ is not a polynomial. The reason is that

(a) it is not an algebraic expression. (b) it involves two variables.

(c) it has no variable. (d) the exponent of its variable is not a whole number.

25. The maximum number of linear factors, which a polynomial of degree 5 may have is:

(a) 5 (b) less than 5 (c) more than 5 (d) 1

26. If $\frac{x}{y} + \frac{y}{x} = -1$, where $x, y \neq 0$ then the value of $(x^3 - y^3)$ is

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

27. If $x + y + z = 9$ and $xy + yz + zx = 23$, then the value of $x^3 + y^3 + z^3 - 3xyz$ will be

(a) 108 (b) 207 (c) 669 (d) 729

Ch. 3. COODINATE GEOMETRY

1. The point (other than origin) for which abscissa is equal to the ordinate will lie in the quadrant

(a) I only (b) I or II (c) I or III (d) II or IV

2. The ordinate of every point on the x-axis is

(a) 1 (b) -1 (c) 0 (d) any real number

3. If the y-coordinate of a point is zero then this point

(a) on the y-axis (b) on the x-axis (c) in the I quadrant (d) in the IV quadrant

4. The point at which the two coordinate axes meet is called the

(a) abscissa (b) ordinate (c) origin (d) quadrant

5. If $O(0,0), A(3,0), B(3,4), C(0,4)$ are four given points then the figure OABC is a

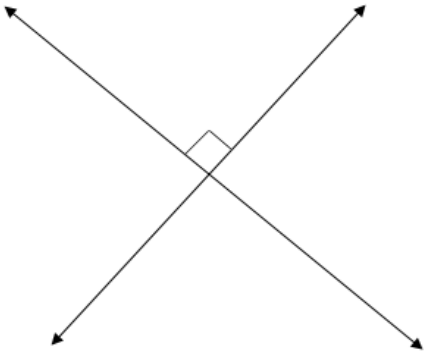
(a) square (b) rectangle (c) trapezium (d) rhombus

6. If $A(-2,3)$ and $B(-3,-5)$ are two given points then (abscissa of A) $-$ (abscissa of B) =?

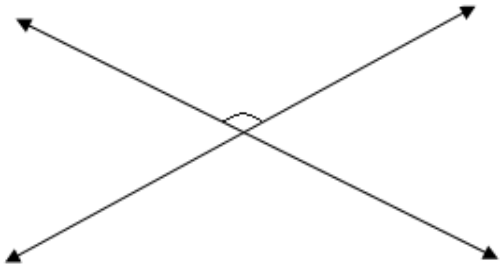
(a) -2 (b) 1 (c) -1 (d) 2

7. Descartes invented the idea of locating points on the plane by referring two mutually perpendicular lines. Which of the following two lines are used for this purpose?

(a)



(b)



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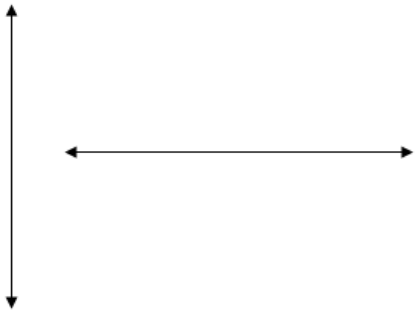
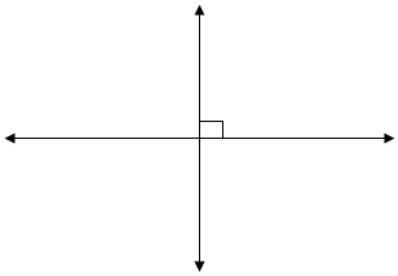


(d)



8. In order to locate a point in a plane, the plane consists of the axes and the four quadrants. Which of the following does not represent this plane?

(a) The cartesian plane (b) The coordinate plane

(c) The simple plane (d) The XY–plane

9. Consider the points $A(4,-7), B(0,3), C(-5,0) D(3,9)$. State which of the following is not correct?

(a) The abscissa of point A is -7. (b) The ordinate of point D is 9.

(c) The point B lies on Y-axis. (d) The point C lies on X-axis.

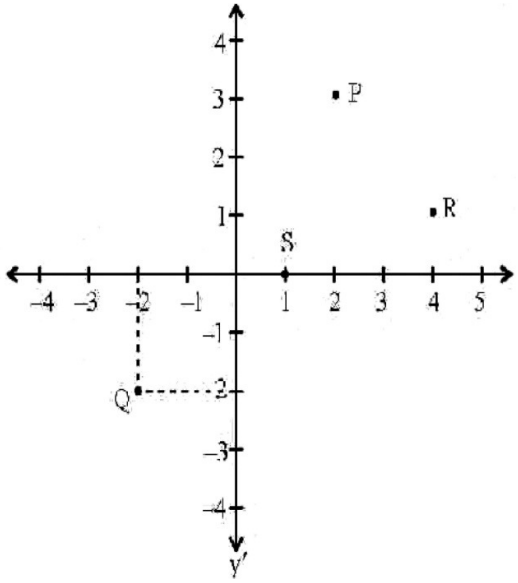
10. If x and y are two different numbers, then which of the following is not correct?

(a) $(x,y) \neq (y,x)$ (b) $(x,y) = (y,x)$

(c) $(x, 0)$ lies on the X-axis (d) $(0, y)$ lies on the Y-axis

11. The point whose y-coordinate is 3 in the given figure is

(a) P (b)Q (b)Q (d)S



Ch. 4. LINEAR EQUATIONS IN TWO VARIABLES

1. The solution of the equation $x - 2y = 4$is:

(a)(0,2) (b)(4,0) (c)(1,1) (d) (2,0)

2. In graphical representation of y = – 4, line is :

(a) parallel to x–axis (b) parallel to y –axis

(c) passes through origin (d) None of these.

3. Solution of the equation $2x + 1 = x + 3$is:

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

4. The graph of line $x - y = 0$ passesthrough:

(a)(2,3) (b)(3,4) (c)(5,6) (d) (0,0)

5. The graph of line $x + y = 7$ intersect the x-axis at:

(a)(7,0) (b)(0,7) (c)(–7,0) (d) (0,–7)

6. Point (4, 1) lies on the line:

(a) $x + 2y = 5$ (b) $x + 2y = -6$ (c) $x + 2y = 6$ (d) $x + 2y = 16$

7. Graph of $x = 2$is a line:

(a) parallel to x–axis (b) parallel to y –axis

(c) passes through origin (d) None of these

8. The linear equation $2x - 5y = 7$has

(a) a unique solution (b) two solutions

(c) infinitely many solutions (d) no solutions

9. The equation $2x + 5y = 7$ has a unique solution, if $x, y$are:

(a) natural numbers (b) positive numbers (c)real numbers (d) rational numbers.

10. If (2, 0) is a solution of the linear equation $2x + 3y = k$, then the value of $k$is

(a)4 (b)6 (c)5 (d)2

11. Any solution of the linear equation $2x + 0y + 9 = 0$in two variables is of the form

(a)$\left(-\frac{9}{2}, m\right)$ (b) $\left(n, -\frac{9}{2}\right)$ (c) $\left(n, -\frac{9}{2}\right)$ (d) $(-9, 0)$

12. The graph of the linear equation $2x + 3y = 6$ cuts the y-axis at the point

(a)(2,0) (b)(0,3) (c)(3,0) (d) (0,2)

13. The equation $x = 7$, in two variables, can be written as

(a) $x + 0y = 7$ (b) $0x + y = 7$ (c) $0x + 0y = 7$ (d) $x + y = 7$

14. Any point on the x – axis is of the form

(a)(x, y) (b)$(0, y)$ (c)$(x, 0)$ (d) (x, x)

15. Any point on the $y = x$is of the form

(a)(a, a) (b)$(0, a)$ (c)$(a, 0)$ (d) $(a, -a)$

16. The equation of x –axis is of the form

(a) x =0 (b) y= 0 (c) $x + y = 0$ (d) $x = y$

17. Graph of $y = 6$is a line :

(a) parallel to x – axis at a distance 6 units from the origin.

(b) parallel to y – axis at a distance 6 units from the origin.

(c) making an intercept 6 on the x–axis.

(d) making an intercept 6 on both the axes.

18. $x = 5, y = 2$is a solution of the linear equation

(a) $x + 2y = 7$ (b) $5x + 2y = 7$ (b) $5x + 2y = 7$ (d) $5x + y = 7$

19. If a linear equation has solutions (–2, 2), (0, 0) and (2, –2), then it is of the form

(a) $y - x = 0$ (b) $x + y = 0$ (c) $-2x + y = 0$ (d) $-x + 2y = 0$

20. The positive solutions of the equation Is ax + by + c = 0 always lie in the

(a) 1st quadrant (b) 2nd quadrant (c) 3rd quadrant (d) 4th quadrant

21. The graph of the linear equation 2x + 3y = 6 is a line which meets the x axis at the point

(a)(2,0) (b)(0,3) (c)(3,0) (d) (0,2)

22. If we multiply or divide both sides of a linear equation with a non-zero number, then the solution of the linear equation:

(a) changes (b) remains the same

(c) changes in case of multiplication only (d) changes in case of division only

23. How many linear equations in x and y can be satisfied by x = 1 and y =2?

(a) only one (b)two (c)infinitely many (d)three

24. The point of the form (a, a) always lies on:

(a) x–axis (b) y–axis (c) on the line y=x (d) on the $x + y = 0$

25. The point of the form (a, –a) always lies on:

(a) $x = a$ (b) y= –a (c) y=x (d) x + y=0

26. Which of the following is not a linear equation in two variables?

(a) $ax + by = c$ (b) $ax^2 + by = c$ (c) $2x + 3y = 5$ (d) $3x + 2y = 6$

27. The graph of ax + by + c = 0is

(a) a straight line parallel to x–axis (b) a straight line parallel toy–axis

(c) a general straight line (d) a line in the 2nd and 3rd quadrant

28. The solution of a linear equation in two variables is

(a) a number which satisfies the given equation

(b) an ordered pair which satisfies the given equation

(c) an ordered pair, whose respective values when substituted for x and y in the given equation, satisfies it

(d) none of these

29. One of the solutions of a linear equation in two variables is

(a)(3,2) (b)(3,–2) (c)(2,3) (d) (–2,–3)

30. The ordered pair (m, n) satisfies the equation ax + by + c = 0if

(a) $am + bn = 0$ (b) $c = 0$ (c) $am + bn + c = 0$ (d) $am + bn - c = 0$

31. The equation of x – axis is

(a) a=0 (b) y= 0 (c) x=0 (d) y =k

32. From the graph of a line, we can find the coordinates of

(a) only two point lying on the line

(b) only two points only lying on the line.

(c) only finite number of points lying on the line.

(d) only infinite number of points lying on the line.

33. A linear equation in two variables has

(a) no solution (b) only one solution (c) only two solutions (d) infinitely many solutions

34. An equation of the form ax + by + c = 0 represents a linear equation in two variables, if

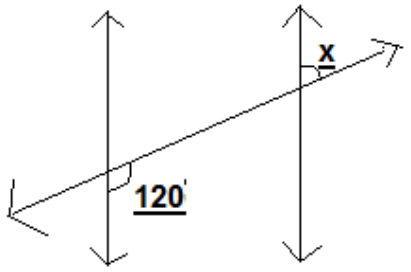
(a) a = 0, b≠ 0 (b) a ≠ 0, b= 0 (c) a = 0, b=0 (d) a = 0, b ≠0

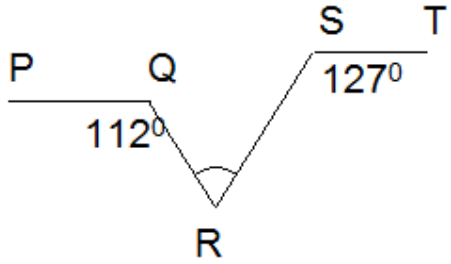
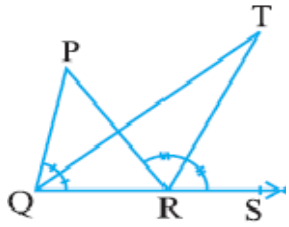
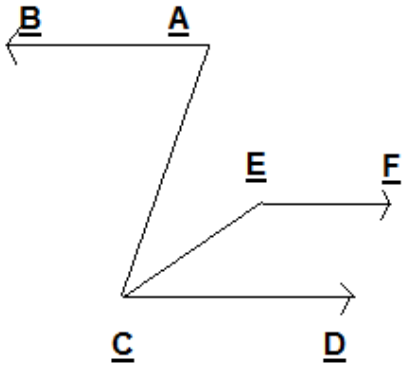
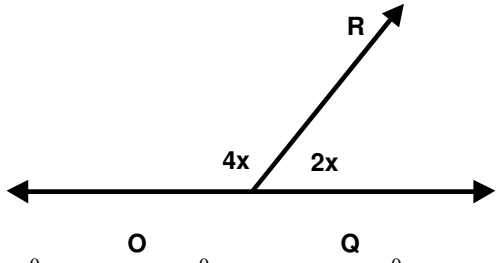
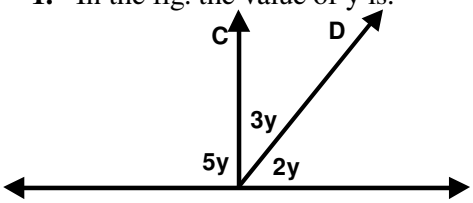
35. The graph of the linear equation in two variables y = mx is

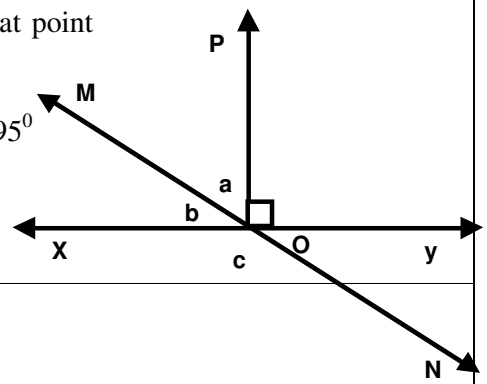
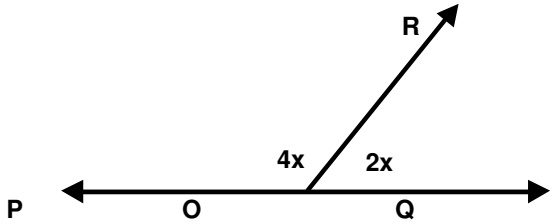
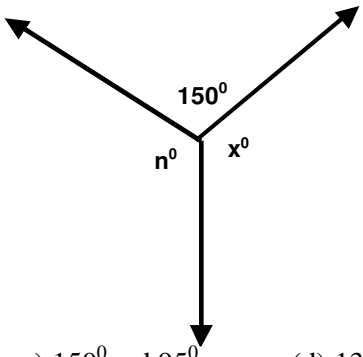
(a) a line parallel to x–axis (b) a line parallel to y –axis

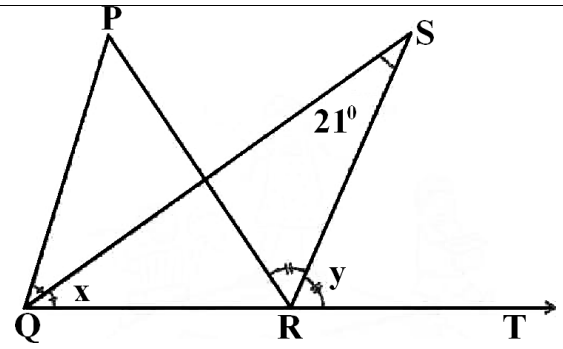
(c) a line passing through the origin (d) not a straight line

	Chapter 5 Euclid's Geometry
Q1	How many least number of distinct points determine a unique line ?
Q2	How many lines can be drawn through both the given points ?
Q3	How many lines can be drawn through a given points.
Q4	In how many points two distinct lines can intersect ?
Q5	In how many points a line , not intersect the plane ?
Q6	In how many points two distinct planes can intersect ?
Q7	In how many lines two distinct planes can intersect ?
Q8	How many least number of distinct points determine a unique plane?
Q9	How many planes can be made to pass through two points ?
Q10	How many planes can be made to pass through three distinct points ?
Q11	The three steps from solids to points are: (a) solids – surfaces – lines –points (b) solids – lines – surfaces –points (c) lines – points – surfaces -solids (d) lines – surface – points –solids
Q12	Euclid's division his famous treatise "The Elements" into_____chapters: (a)13 (b)12 (c)11 (d)9
Q13	In Indus valley civilization (about 300 B. C.) the bricks used for construction work were having dimensions in the ratio: (a) 1 : 3 : 4 (b) 4 : 2 : 1 (c) 4 : 4 : 1 (d) 4 : 3 :2
Q14	Pythagoras was a student of:

	(a) Thales (b) Euclid (c) Both (a)and(b) (d)Archimedes.
Q15	Euclid belongs to the country: (a) Bablyonia (b) Egypt (c)Greece (d)Rome.
Q16	It is known that if x + y = 10 then x + y + z = 10 + z. The Euclid's axiom that illustrates this statement is: (a) 1st Axiom (b)2nd Axiom (c)3rd Axiom (d) 4th Axiom
Q17	In ancient India, the shapes of altrars used for house hold rituals were: (a) Squares and circles (b) Triangles and rectangles (c) Trapeziums and pyramids (d) Rectangles and squares
Q18	The number of interwoven isosceles triangles in Sriyantras (in the Atharvaveda) is: (a)7 (b)8 (c)9 (d)11
Q19	Greek's emphasize on: (a) Inductive reasoning (b) Deductive reasoning (c) Both (a)and(b) (d) Practical use of geometry
Q20	In ancient India, Altrars with combination of shapes like rectangles, triangles and trapeziums were used for: (a) Public worship (b) Household rituals (c) Both (a)and(b) (d) None of these
	Chapter 6 Lines and Angles
Q1	One angle is equal to three times its supplement. The measure of the angle is a) 130^0 b) 135^0 c) 90^0 d 120^0
Q2	Two straight lines AB and CD cut each other at O. If $\angle$ BOD = 63^0, then $\angle$ BOC = a) 63^0 b) 117^0 c) 17^0 d) 153^0
Q3	Given $\angle$POR = 3x and $\angle$QOR = 2x + 10^0. If POQ is a straight line, then the value of x is a) 30^0 b) 34^0 c) 36^0 d) none of these
Q4	Two lines AB and CD intersect at O. If $\angle$ AOC + $\angle$ COB + $\angle$BOD = 270^0, THEN $\angle$AOC = a) 70^0 b) 80^0 c) 90^0 d) 180^0
Q5	AB and CD are two parallel lines .PQ cuts AB and CD at E and F respectively. EL is the bisector of $\angle$FEB. If $\angle$LEB = 35^0 , then $\angle$CEQ will be a) 55^0 b) 70^0 c) 110^0 d) 130^0
Q6	If AB // CD , then the value of x is  a) 20^0 b) 30^0 c) 45^0 d 60^0
Q7	In the given figure PQ || ST, $\angle$ PQR = 112^0 and $\angle$ RST = 127^0 , find $\angle$QRS.

	
Q8	The side QR of Δ PQR is produced to a point S. If the bisectors of ∠PQR and∠ PRS meet at point T, then prove that ∠QTR = . 
Q9	 In the figure, AB // EF // CD If ∠BAC = 57^0, ∠ ACE = 22^0, ∠ ECD = 35^0 .What is the ∠CEF ?
Q10	An angle is 14^0 more then its complementary angle .What is its measure ?
Q11	**1.** In fig. POQ is a line, ∠POR = 4x and ∠QOR = 2x then the value of x is  (a) 50^0 (b) 20^0 c) 30^0 (d) 90^0
Q12	**1.** In the fig. the value of y is:  (a) 60^0 (b) 18^0 c) 30^0 d) none of these
Q13	For two parallel lines sum of interior angles on the same side of a transversal line is

Q14	**1.** In fig., lines XY and MN intersect each other at point O. If $\angle POY = 90^0$ and a : b = 2 : 3 then the value of $\angle C$ is (a) 140^0 (b) 120^0 c) 80^0 (d) 95^0 
Q15	In fig. POQ is a line, $\angle POR = 4x$ and $\angle QOR = 2x$ then the value of x is  (a)50^0 (b)20^0 c)30^0 (d)90^0
Q16	The sum of all the angles around a point is (a)100^0 (b)180^0 c)90^0 (d)360^0
Q17	The measure of an angle which is equal to its supplement is (a)100^0 (b)75^0 c)90^0 (d)60^0
Q18	In fig., $n - x = 3^0$ then values of x and n are:  (a) 126^0 and 129^0 (b) 125^0 and28^0 c) $150^0$and 95^0 (d) 135^0 and65^0
Q19	In triangle interior opposite angle is always less than: (a) any angle of the triangle (b) opposite angle (c)right angle (d) exterior angle
Q20	In the given figure, measure of $\angle QPR$ is (a)10.5^0 (b)42^0 c)111^0 (d)50^0



Chapter 7 Triangles

Q1 If all the three angles of a triangle are equal , then each of them are equal to

a) 90^0 b) 45^0 c) 60^0 d) 30^0

Q2 If two acute angles of a right triangle are equal , then each acute angle is equal to

a) 90^0 b) 45^0 c) 60^0 d) 30^0

Q3 Side BC of a triangle ABC has been produced to a point D such that $\angle$ ACD = 120^0 . If $\angle B = ½ \angle A$, then $\angle A$ =

a) 80^0 b) 75^0 c) 60^0 d) 90^0

Q4 In a triangle , an exterior angle at a vertex is 95^0 and its one of the interior opposite angle is 55^0 ,then the measure of the other interior angle is

a) 55^0 b) 85^0 c) 40^0 d) 90^0

Q5 In ΔABC, if $\angle A = 100^0$, AD bisect $\angle A$ and AD $\perp$ BC. Then, $\angle B$ =

a) 90^0 b) 40^0 c) 60^0 d) 30^0

Q6 In a ΔABC, if $\angle A = 60^0$, $\angle B = 80^0$ and the bisector of $\angle B$ and $\angle C$ meet at O, then $\angle BOC$ =

a) 30^0 b) 60^0 c) 120^0 d) 150^0

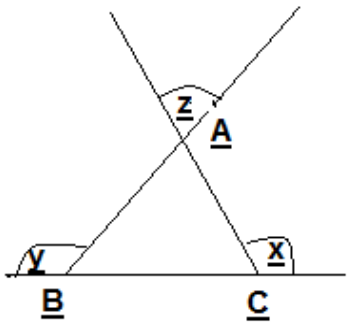
Q7 Line segment AB and CD intersect at O such that AC//DB. If $\angle CAB = 45^0$ and $\angle CDB = 55^0$,then $\angle BOD$ =

a) 30^0 b) 80^0 c) 120^0 d) 150^0

Q8 If the measure of angles of a triangles are in the ratio of 3:4:5, what is the measure of the smallest angle of the triangle?

a) 30^0 b) 60^0 c) 20^0 d) 45^0

Q9

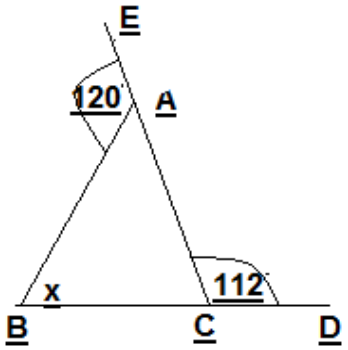


What is z in terms of x and y ?

a) $x + y + 180^0$ b) $x + y - 180^0$

c) $180^0 - (x + y)$ d) $x + y + 360^0$

Q10



The value of x is

a) 52^0 b) 54^0 c) 32^0 d) 42^0

Q11 Line segment joining the mid- point of any side with the opposite vertex is

(a) altitude (b) median c) perpendicular bisector (d) angle bisector

Q12 In a triangle ABC, if $2\angle A = 3\angle B = 6\angle C$, then the measure of $\angle A$ is

(a) 30^0 (b) 75^0

c) 90^0 (d) 60^0

Q13 In a triangle ABC, if $\angle A - \angle B = 33^0$ and $\angle B - \angle C = 18^0$, then the measure of $\angle A$ is

(a) 88^0 (b) 55^0 c) 37^0 (d) 60^0

Q14 In a triangle ABC, if $\angle A + \angle B = 65^0$ and $\angle B + \angle C = 140^0$, then the measure of $\angle A$ is

(a)40^0 (b)25^0 c)115^0 (d)60^0

Q15 If two angles of a triangle are unequal then the side opposite side to the smaller angle is:

(a) greater (b)90^0 (c)smaller (d) none of these

Q16 The sides opposite to two equal angles of a triangle are:

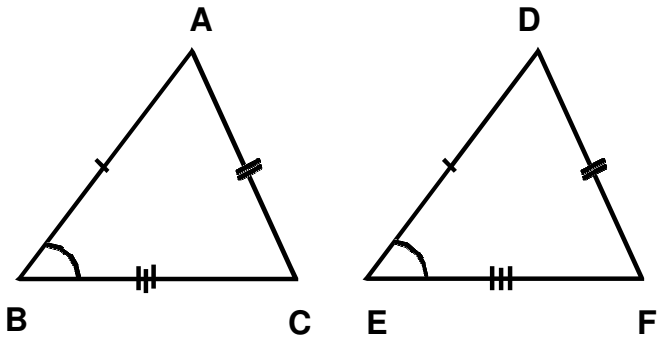
(a) Not equal (b)congruent (c) may be congruent (d) not congruent

Q17 Which one of the following is the value of congruency?

(a) SAS (b) ASS (c)SSA (d) none of these

Q18 By which congruence rule following triangles are congruent?

(a) SAS (b) ASS (c)AAS (d)SSS



Q19 In a right triangle, if acute angle is double of other angle then hypotenuse is:

(a) equal to the smallest side (b) three times the smallest side

(c) twice the smallest side (d) smaller than any of the two sides

Q20 In a triangle ABC, if median BE = median CF then triangle is:

(a) Equilateral (b) Isosceles (c) Scalene (d) none of these.

CHATER 8 Quadrilateral

Q1 If three angles of a quadrilateral are 110^0, 50^0 and 40^0. What will be fourth angle

a)140^0 b)150^0 c)160^0 d)170^0

Q2 Two opposite angles of a parallelogram are $(3x -2)^0$ and $(50-x)^0$.The measure of each angle of the parallelogram is

a) 13^0 b) 15^0 c) 16^0 d) 17^0

Q3 In a parallelogram ABCD , what will be $\angle C + \angle D$

a)90^0 b)180^0 c)160^0 d)170^0

Q4

If bisectors of $\angle A$ and $\angle B$ of a quadrilateral ABCD intersect each other at P, of $\angle B$ and $\angle C$at Q, of $\angle C$ and $\angle D$ at R and of $\angle D$ and $\angle A$ at S, then PQRS is a

a) parallelogram (b) rectangle (c) rhombus

(d) quadrilateral whose opposite angles are supplementary

Q5 If APB and CQD are two parallel lines then bisectors of the angles APQ. BPQ, CQP and PQD form a

a) parallelogram (b) square (c) rhombus (d) rectangle

Q6 The figure obtained the midpoints of the sides of the sides of a rhombus, taken in order is a

a)parallelogram (b)square (c)rhombus (d)rectangle

Q7 D and E are the midpoints of the sides AB and AC of ΔABC and O is any point on side BC. O is joined to A. If P and Q are the midpoints of OB and OC respectively,

then DEQP is a

(a) parallelogram (b)square (c)rhombus (d)rectangle

Q8 The quadrilateral formed by joining the midpoints of the sides of a quadrilateral PQRS, taken in order, is a square only if

(a) PQRS is a rhombus (b) diagonals of PQRS are equal and perpendicular

(c) diagonals of PQRS are perpendicular (d) diagonals of PQRS are equal.

Q9 The diagonals AC and BD of a parallelogram ABCD intersect each other at the point O. If $\angle DAC = 32^0$ and $\angle AOB = 70^0$, then $\angle DBC$ is equal to

(a) 24^0 (b) 86^0 (c) 38^0 (d) 32^0

Q10 Which of the following is not true for a parallelogram?

(a) opposite sides are equal (b) opposite angles are bisected by the diagonals

(c) opposite angles are equal (d) diagonals bisect each other.

Q11 D and E are the midpoints of the sides AB and AC of ΔABC. DE is produced to F. To prove that CF is equal and parallel to DA, we need an additional information which is

(a) $\angle DAE = \angle EFC$ (b) AE=EF (c) DE=EF (d) $\angle ADE = \angle ECF$

Q12 The bisectors of any two adjacent angles of a parallelogram intersect at

(a) 45^0 (b) 30^0 (c) 90^0 (d) 60^0

Q13 The bisectors of the angles of a parallelogram enclose a

a) parallelogram (b) square (c) rhombus (d) rectangle

Q14 ABCD is a parallelogram and E and F are the centroid of triangle ABD and BCD respectively, then EF=

(a) AE (b) BE (c) CE (d) DE

Q15 ABCD is a parallelogram, M is the midpoint of BD and BM bisects $\angle B$, then $\angle AMB$ =

(a)45^0 (b)75^0 (c)90^0 (d)60^0

Q16 Consecutive angles of parallelogram are

(a) equal (b) supplementary (c) complementary (d) none of these

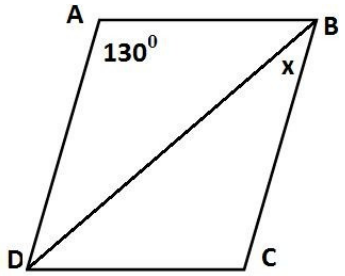
Q17 Given a rectangle ABCD and P, Q, R, S midpoints of AB, BC, CD and DA respectively. Length of diagonal of rectangle is 8 cm, the quadrilateral PQRS is

(a) parallelogram with adjacent sides4cm (b) rectangle with adjacent sides 4cm
(c) rhombus with side4cm (d) square with side 4cm

Q18 If an angle of a parallelogram is two-third of its adjacent angle, the smallest angle of the parallelogram is

(a)108^0 (b)54^0 (c)72^0 (d)81^0

Q19 **1.** In the below figure ABCD is a rhombus, then the value of x is (a)20^0 (b)25^0 (c)30^0 (d)50^0



Q20 If two consecutive sides of a rhombus are represented by 3*x* - 6 and *x* + 14, then the perimeter of the rhombus is

(a)10 (b)24 (c)70 (d)96

Chapter 9 Area of triangle and parallelogram

Q1 *Parallelograms on the same base and between the same parallels are_____in area.*

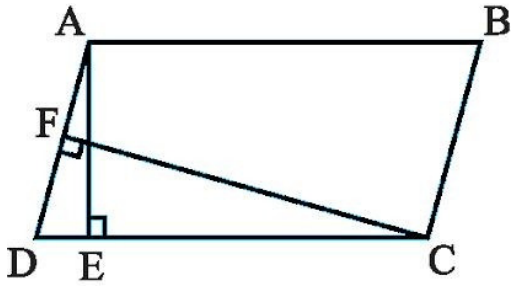
(a) half (b) one third (c) one fourth (d) equal

Q2 If a triangle and a parallelogram are on the same base and between the same parallels, then prove that the area of the triangle is__of the area of the parallelogram.

(a) half (b) one third (c) one fourth (d) equal

Q3 In the below Fig., ABCD is a parallelogram, AE ⊥ DC and CF ⊥AD. If AB = 16 cm, AE = 8 cm and CF = 10 cm, find AD.

(a)10.8 (b)11.8 (c)12.8 (d)13.8



Q4 In the above Fig., ABCD is a parallelogram, AE ⊥ DC and CF ⊥AD. If AD = 9 cm, CF = 4 cm and DC = 12 cm, find AE.

(a) 3cm (b) 6cm (c) 9cm (d) 2cm

Q5 In the above Fig., ABCD is a parallelogram, AE ⊥ DC and CF ⊥AD. If AD = 5 cm, CF = 8 cm and AE = 4 cm, find AB.

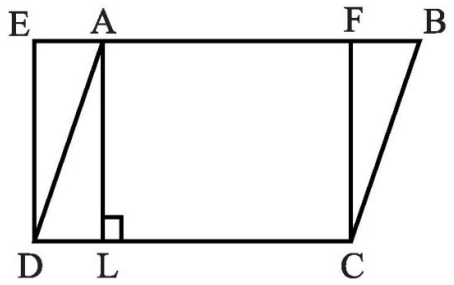
(a) 10cm (b) 20cm (c) 9cm (d) 12cm

Q6 If E,F,G and H are respectively the mid-points of the sides of a parallelogram ABCD, then ar (EFGH)=

(a) ar(ABCD) (b)1/2 ar(ABCD) (c)1/3ar(ABCD) (d) 1/4ar(ABCD)

Q7 In the below Fig., ABCD is a parallelogram and EFCD is a rectangle, then ar (EFGH)=

(a) ar(ABCD) (b)1/2 ar(ABCD) (c)1/3ar(ABCD) (d)1/4ar(ABCD)



Q8 A median of a triangle divides it into two triangles of_____areas.

(a) half (b) one third (c) one fourth (d) equal

Q9 Area of a triangle is_____the product of its base and the corresponding altitude.

(a) half (b) one third (c) one fourth (d) equal

Q10 Area of a parallelogram is_____the product of its base and the corresponding altitude.

(a) half (b) one third (c) one fourth (d) equal

Q11 The area of a rhombus, the lengths of whose diagonals are 16 cm and 24 cm respectively, is

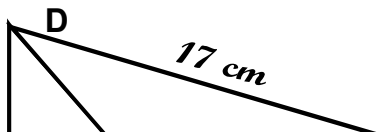
(a) $192cm^2$ (b)$120cm^2$ (c)$384cm^2$ (d) none of these

Q12 The area of a trapezium whose parallel sides are 9 cm and 6 cm and the distance between these sides is 8 cm is

(a) $92cm^2$ (b) $120cm^2$ (c) $60cm^2$ (d) none of these

Q13 The area of a below quadrilateral ABCD, ∠B = 90^0 is

(a) $112cm^2$ (b)$120cm^2$ (c)$114cm^2$ (d) none of these



A

8 cm

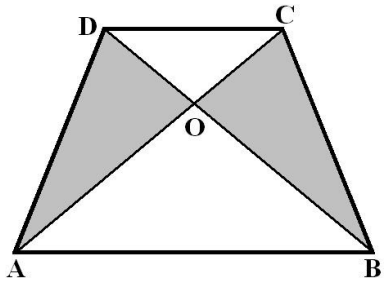
Q14

D, E and F are respectively the mid-points of the sides BC, CA and AB of a ΔABC, then ar(DEF)

(a) ar(ABC) (b) 1/2ar(ABC) (c)1/3ar(ABC) (d) 1/4ar(ABC)

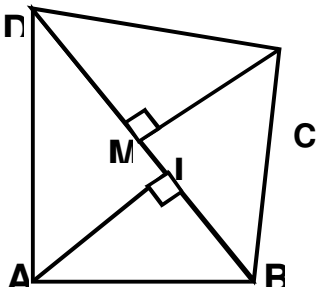
Q15 In the below figure, ABCD is trapezium in which AB || DC and its diagonals AC and BD intersect at O then ar(AOD)=

(a) ar(BOC) (b) 1/2ar(BOC) (c) 1/3ar(BOC) (d) 1/4ar(BOC)



Q16 In the adjoining figure, ABCD is a quadrilateral in which diagonal BC = 14 cm. If AL $\perp$ BD and CM $\perp$ BD such that AL = 8cm and CM = 6 cm, then the area of quadrilateral is

(a) $90cm^2$ (b) $95cm^2$ (c) $98cm^2$ (d) none of these



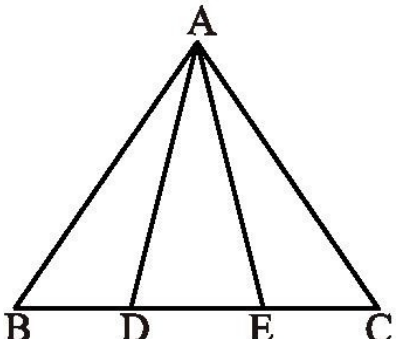
Q17 In the given figure, BD = DE = EC. Mark the correct option

(a) ar(ΔABD) = ar(ΔAEC)

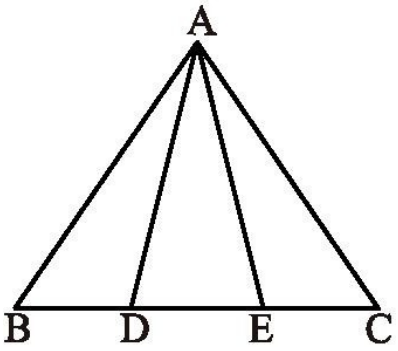
(b) ar(ΔDBA) = ar(ΔADC)

(c) ar(ΔADE) = 1/3 ar(ΔABC)

(d) ar(ΔABE) = 2/3ar(ΔABC)



Q18 In the given figure, BD = DE = EC. Mark the correct option



(a) ar(ΔABD) = ar(ΔAEC)

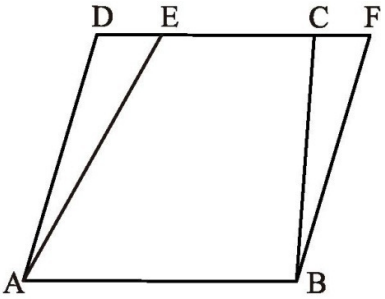
(b) ar(ΔDBA) = ar(ΔADC)

(c) ar(ΔADE) = 1/3 ar(ΔABC)

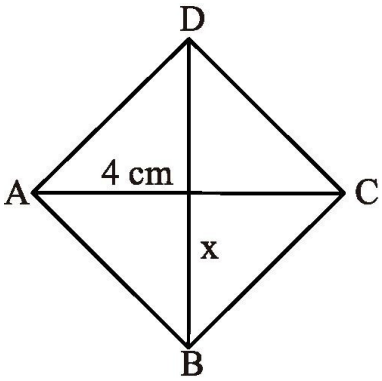
(d) ar(ΔABE) = 2/3ar(ΔABC)

Q19 In the given figure, ABCD and ABFE are parallelograms and ar(quad. EABC) = 17 cm^2, ar (||^{gm} ABCD) = 25 cm^2 then ar (ΔBCF) is

(a) 4cm^2 (b) 8cm^2 (c) 4.8cm^2 (d) 6cm^2



Q20 In the given figure, find x, if ABCD is a rhombus and AC = 4cm, ar (ABCD) = 20 cm^2.



(a) 4cm (b)5cm (c)10cm (d) 2.5cm

CHAPTER 10 Circles

Q1 The radius of the circle is 5 cm and distance of the chord from the centre of the circle is 4 cm. Find the length of the chord.

(a) 8cm (b) 7cm (c) 6cm (d) 5cm

Q2 If the length of a chord of a circle at a distance of 5 cm from the centre of the circle is 24 cm, find the radius of the circle.

(a) 13cm (b) 14 cm (c) 16cm (d) 15cm

Q3 AB is a chord of the circle with centre O and radius 13 cm. If OM ⊥AB and OM =5 cm, find the length of the chord AB.

(a) 24cm (b) 27 cm (c) 26cm (d) 25cm

Q4 In a circle of radius 25 cm, AB and AC are two chords, such that AB = AC = 30

cm .Find the length of the chord.

(a) 40cm (b) 48 cm (c) 60cm (d) 50cm

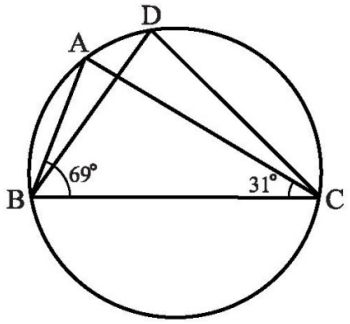
Q5 A chord of a circle is equal to the radius of the circle. Find the angle subtended by the chord at a point on the minor arc

(a) 150^0 (b) 30º (c) 60º (d) none of these

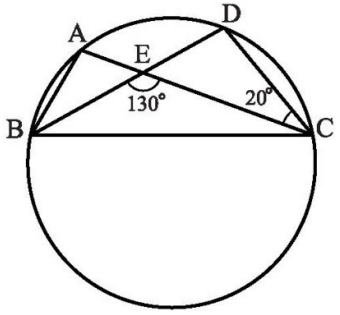
Q6

In the below Fig., ∠ABC = 69°, ∠ACB = 31°, find ∠BDC. (a)80º

b) 60º (c)90º (d)100^0



Q7



1. In the above Fig., A, B, C and D are four points on a circle. AC and BD intersect at a point E such that ∠BEC = 130° and ∠ECD = 20°. Find ∠BAC.

(a)110º (b)150º (c)90º (d)100^0

Q8

ABCD is a cyclic quadrilateral whose diagonals intersect at a point E. If ∠DBC = 70°, ∠BAC is 30°, find ∠BCD.

(a)80º (b)60º (c)90º (d)100^0

Q9

ABCD is a cyclic quadrilateral. If ∠BCD = 100°, ∠ABD is 30°, find ∠ABD.

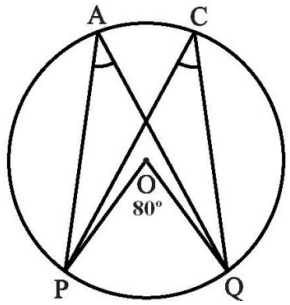
(a)80º (b)60º (c)90º (d)70^0

Q10 ABCD is a cyclic quadrilateral in which BC is parallel to AD, ∠ADC = 110^0 and ∠BAC =50^0.Find ∠DAC

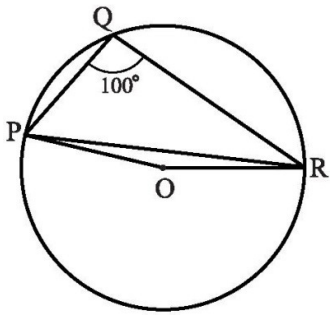
(a)80º (b)60º (c)90º (d)170^0

Q11 In the below figure, ∠POQ = 80^0, find ∠PAQ

(a) 80º (b)40º (c)100º (d) none of these



Q12



1. In the above figure, ∠PQR = 100°, where P, Q and R are points on a circle with centre O. Find

   ∠OPR.

   (a) 80º (b)40º (c)10º (d) none of these

Q13 Prove that "*Equal chords of a circle subtend equal angles at the centre".*

Q14 Prove that "C*hords of a circle which subtends equal angles at the centre are equal".*

Q15 Prove that "*The perpendicular from the centre of a circle to a chord bisects the chord."*

Q16 Prove that "*The line drawn through the centre of a circle to bisect a chord is perpendicular to the chord".*

Q17 Prove that "*Chords equidistant from the centre of a circle are equal in length"*

Q18 Prove that "*Chords of a circle which are equidistant from the centre are equal"*

Q19 Prove that *"line joining the midpoints of two equal chords of circle subtends equal angles with the chord."*

Q20 If two chords of a circle are equally inclined to the diameter through their point of intersection, prove that the chords are equal.

CHAPTER 11 Constructions

Q1 In a pair of set squares, one if with angles are

(a) $30^0, 60^0, 90^0$ (b) $30^0, 30^0, 45^0$ (c) $75^0, 25^0, 80^0$ (d) $65^0, 15^0, 100^0$

Q2 To draw the perpendicular bisector of line segment AB, we open the compass

more than $\frac{1}{2}$ AB (b) less than $\frac{1}{2}$ AB (c) equal to $\frac{1}{2}$ AB (d) none of these

Q3 To construct an angle of 22 .5^0,we _

a) bisect an angle of 60^0 (b) bisect an angle of 30^0

(c) bisect an angleof45^0 (d) none of these

Q4 For which of the following condition the construction of a triangle is not possible:

(a) If two sides and angle included between them is not given

(b) If two sides and angle included between them is not given

(c) If its three sides are given

(d) If two angles and side included between them is given

Q5 Construction of a triangle is not possible if:

(a) AB + BC<AC (b) AB + BC=AC (c) both (a)and(b) (d) AB + BC >AC

Q6 With the help of ruler and compass it is not possible to construct an angle of

(a) 37.5^0 (b)40.5^0 (c) 22.5^0 (d) 67.5^0

Q7 The construction of a triangle ABC given that BC = 3 cm, $\angle$C = 60^{0}is possible when difference of AB and AC is equal to

(a)3.2cm (b)3.1cm (c)3cm (d) 2.8cm

Q8 The construction of a triangle ABC, given that BC = 6cm, $\angle$ = 45^{0}is not possible when the difference of AB and AC is equal to

(a)6.9cm (b)5.2cm (c)5.0c m (d) 4.0cm.

Q9 Construction of a triangle is not possible if:

(a) AB – BC<AC (b) AB – BC=AC

(c) both (a)and(b) (d) AB – BC >AC

Q10 To construct an angle of 15^0,we

(a) bisect an angle of 60^0 (b) bisect an angle of30^0

(c) bisect an angle of 45^0 (d) none of these

Q11 Construct the following angles with the help of ruler and compass, if possible – 35^0, 40^0, 57^0, 75^0, 15^0, 135^0.

Q12 Draw a ΔABC, in which AB = 4cm, $\angle$A = 60^0 and BC – AC = 115 cm.

Q13 Draw a ΔABC, in which BC = 5cm, $\angle$B = 60^0 and AC + AB = 7.5cm.

Q14 Draw an equilateral triangle whose altitude is 6cm.

Q15 Draw a triangle ABC whose perimeter is 10.4 cm and the base angle are 45^0 and 60^0.

Q16 Construct a triangle ABC, in which ∠B = 60°, ∠C = 45° and AB + BC + CA = 11cm.

Q17 Construct a triangle ABC in which BC = 7cm, ∠B = 75° and AB + AC = 13cm.

Q18 Construct a triangle ABC in which BC = 8cm, ∠B = 45° and AB – AC = 3.5cm.

Q19 Construct a triangle PQR in which QR = 6cm, ∠Q = 60° and PR – PQ = 2cm.

Q20 Construct a triangle XYZ in which ∠Y = 30°, ∠Z = 90° and XY + YZ + ZX = 11cm.

Ch. 12. HERON'S FORMULA

1. The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m. Find its area.

   (a) $4\sqrt{30}$ (b) $8\sqrt{30}$ (c) $12\sqrt{30}$ (d) $16\sqrt{30}$

2. Find the area of a triangle, two sides of which are 8 cm and 11 cm and the perimeter is 32cm

   (a) $1500\sqrt{3}$ (b) $3000\sqrt{3}$ (c) $4500\sqrt{3}$ (d) $6000\sqrt{3}$

3. Sides of a triangle are in the ratio of 12 : 17 : 25 and its perimeter is 540cm. Find its area.

   (a)6000 (b)9000 (c)12000 (d) none of these

4. The height corresponding to the longest side of the triangle whose sides are 42 cm, 34 cm and 20 cm in length is

   (a) 15cm (b)36cm (c)16cm (d) none of these

5. A park, in the shape of a quadrilateral ABCD, has $\angle C = 90°$, AB = 9 m, BC = 12 m, CD = 5 m and AD = 8 m. How much area does it occupy?

   (a)56.4m^2 (b)55.4m^2 (c)65.4m^2 (d) none of these

6. Find the area of a quadrilateral ABCD in which AB = 3 cm, BC = 4 cm, CD = 4 cm, DA = 5

cm and AC = 5cm.

(a) 15cm^2 (b)15.4cm^2 (c)15.2cm^2 (d) none of these

7. A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30m and its longer diagonal is 48 m, how much area of grass field will each cow begetting?

(a) 45m^2 (b)48 m^2 (c)51m^2 (d) none of these

8. The altitude of a triangular field is one-third of its base. If the cost of sowing the field at Rs 58 per hectare is Rs. 783 then its altitude is

(a) 900m (b)600m (c)300m (d) none of these

9. A triangle and a parallelogram have the same base and the same area. If the sides of the triangle are 26 cm, 28 cm and 30 cm, and the parallelogram stands on the base 28 cm, find the height of the parallelogram.

(a) 12cm (b)15cm (c)18cm (d) none of these

10. The area of an isosceles triangle, each of whose equal sides is 13 m and whose base is24 m, will be

(a) 45m^2 (b)48 m^2 (c)60m^2 (d) none of these

11. The base of an isosceles triangle is 24 cm and its area is192 cm^2, then its perimeter is

(a) 64cm (b)65cm (c)68cm (d) none of these

12. The difference between the sides at right angles in a right-angled triangle is 14 cm. If the area of the triangle is 120 cm^2, then the perimeter of the triangle is

(a) 64cm (b)60cm (c)68cm (d) none of these

13. The base of a triangular field is three times its altitudes. If the cost of sowing the field at Rs 58 per hectare is Rs. 783 then its base is

(a) 900m (b)600m (c)1200m (d) none of these

14. The area of the triangle whose sides are 42 cm, 34 cm and 20 cm in length is

(a) 150cm^2 (b)336cm^2 (c)300cm^2 (d) none of these

15. The height corresponding to the longest side of the triangle whose sides are 91 cm, 98 cm and 105 cm in length is

(a) 76.4cm (b)78.4cm (c)65.4cm (d) none of these

16. The base of a right-angled triangle is 48 cm and its hypotenuse is50 cm then its area is

(a) 150cm^2 (b)336cm^2 (c)300cm^2 (d) none of these

17. A field is in the shape of a trapezium whose parallel sides are 25 m and 10 m. The non-

parallel sides are 14 m and 13 m. Find the area of the field.

(a)89.4m^2 (b) 89.075 m^2 (c)89.75m^2 (d) none of these

Ch. 13. Surface areas and Volumes

1. The surface area of a cuboid is

(a) $2(lb + bh + lh)$ (b) $3(lb + bh + lh)$ (c) $2(lb - bh - lh)$ (d) $3(lb - bh - lh)$

2. The surface area of a cube if edge 'a' is

(a)7a^2 (b)6a^2 (c)5a^3 (d)5a^2

3. The length, breadth and height of a room is 5m, 4m and 3m. The cost of white washing its four walls at the rate of Rs. 7.50 per m^{2}is

(a)Rs.110 (b)Rs.109 (c)Rs.220 (d) Rs.105

4. The perimeter of floor of rectangular hall is 250m. The cost of the white washing its four walls is Rs. 15000. The height of the room is

(a)5m (b)4m (c)6m (d)8m

5. The breadth of a room is twice its height and is half of its length. The volume of room is512dm^3. Its dimensions are

(a) 16 dm, 8 dm,4dm (b) 12 dm, 8 dm, 2dm (c) 8 dm, 4 dm,2dm (d) 10 dm, 15 dm, 20dm

6. The area of three adjacent faces of a cube is x, y and z. Its volume Vis

(a) $V = xyz$ (b) $V^3 = xyz$ (c) $V^2 = xyz$ (d) none of these

7. Two cubes each of edge 12 cm are joined. The surface area of new cuboid is

(a)140cm^2 (b) 1440 cm^2 (c)144cm^2 (d) 72 cm^2

8. The total surface area of cylinder of base radius 'r' and height 'h' is

(a) $2\pi(r + h)$ (b) $2\pi r(r + h)$ (c) $3\pi r(r + h)$ (d) $4\pi r(r + h)$

9. The curved surface area of a cylinder of height 14 cm is 88 cm^2. The diameter of its circular base is

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

10. It is required to make a closed cylindrical tank of height 1 m and base diameter 140cm from a metal sheet. How many square meters sheet is required for the same?

(a) 6.45m^2 (b) 6.48m^2 (c)7.48m^2 (d)5.48m^2

11. A metal pipe is 77 cm long. Inner diameter of cross section is 4 cm and outer diameter is 4.4cm. Its inner curved surface area is :

(a) 864cm^2 (b)968cm^2 (c) 768cm^2 (d) none of these

12. The diameter of a roller is 84 cm and its length is120 cm. It takes 500 complete revolutions to move once over to level a playground. The area of the playground in m^2

is:

(a)1584 (b)1284 (c)1384 (d)1184

13. A cylindrical pillar is 50 cm in diameter and 3.5 m in height. The cost of painting its curved surface at the rate of Rs. 12.50 per $m^2$is:

(a) Rs. 68.75 (b) Rs. 58.75 (c) Rs. 48.75 (d) Rs.38.75

14. The inner diameter of circular well is 3.5m. It is 10m deep. Its inner curved surface area, in m^2, is:

(a)120 (b)110 (c)130 (d)140

15. In a hot water heating system, there is a cylindrical pipe of length 28 m and diameter 5 cm. The total radiating surface area in the system in $m^2$is:

(a)6.6 (b)5.5 (c)4.4 (d)3.4

16. The curved surface area of a right circular cone of slant height 10 cm and base radius 7 cm is

(a)120cm^2 (b)220 cm^2 (c) 240cm^2 (d) 140cm^2

17. The height of a cone is 16 cm and base radius is 12 cm. Its slant height is

(a) 10cm (b)15cm (c)20cm (d) 8cm

18. The curved surface area of a right circular cone of height 16 cm and base radius 12 cm is

(a) 753.6 cm^2 (b)1205.76cm^2 (c) 863.8cm^2 (d) 907.6cm^2

19. The curved surface area of a right circular cone of slant height 10 cm and base radius 10.5 cm is

(a)185cm^2 (b)160 cm^2 (c) 165cm^2 (d) 195cm^2

20. The slant height of a cone is 26 cm and base diameter is 20 cm. Its height is

(a)24cm (b)25 cm (c)23cm (d) 35cm

21. The curved surface area of a cone is 308 $cm^2$and its slant height is 14 cm. The radius of its base is

(a) 8cm (b)7cm (c)9cm (d) 12cm

22. A conical tent is 10 m high and the radius of its base is 24 m. The slant height of tent is

(a)26m (b)28m (c)25m (d) 27m

23. The slant height and base diameter of a conical tomb are 25 m and 14 m respectively. The cost of white washing its curved surface at the rate of Rs. 210 per 100 $m^2$is

(a)Rs.1233 (b)Rs.1155 (c)Rs.1388 (d) Rs.1432

24. A joker's cap is in the form of cone of base radius 7 cm and height 24 cm. The area of sheet to make 10 such caps is

(a)5500cm^2 (b) 6500 cm^2 (c)8500cm^2 (d) 3500cm^2

25. The curved surface area of a hemisphere of radius 'r' is

(a)$2\pi r^2$ (b)$4\pi r^2$ (c)$3\pi r^2$ (d)$5\pi r^2$

26. The total surface area of a hemisphere of radius 'r' is

(a)$2\pi r^2$ (b)$4\pi r^2$ (c)$3\pi r^2$ (d)$5\pi r^2$

27. The curved surface area of a sphere of radius 7 cm is:

(a)516cm^2 (b)616 cm^2 (c) 716cm^2 (d) 880cm^2

28. The curved surface area of a hemisphere of radius 21 cm is:

(a)2772cm^2 (b) 2564 cm^2 (c)3772cm^2 (d) 4772cm^2

29. The curved surface area of a sphere of radius 14 cm is:

(a) 2464cm^2 (b) 2428 cm^2 (c)2464 cm^2 (d) none of these.

30. The curved surface area of a sphere of diameter 14 cm is:

(a)516cm^2 (b)616 cm^2 (c) 716cm^2 (d) 880cm^2

31. Total surface area of hemisphere of radius 10 cm is

(a)942cm^2 (b)940 cm^2 (c) 842cm^2 (d) 840cm^2

32. The radius of a spherical balloon increases from 7 cm to 14 cm s air is being pumped into it. The ratio of surface area of the balloon in the two cases is:

(a) 4:1 (b) 1:4 (c) 3:1 (d) 1 :3

33. A matchbox measures 4 cm x 2.5 cm x 1.5 cm. The volume of packet containing 12 such boxes is:

(a)160cm^3 (b)180 cm^3 (c) 160cm^2 (d) 180cm^2

34. A cuboidal water tank is 6 m long, 5 m wide and 4.5 m deep. How many litre of water can it hold?

(a) 1350 liters (b)13500liters (c)135000liters (d) 135liters

35. A cuboidal vessel is 10 m long and 8 m wide. How high must it be made to hold 380 cubic metre of a liquid?

(a) 4.75m (b)7.85m (c)4.75cm (d) none of these

36. The capacity of a cuboidal tank is 50000 litres. The length and depth are respectively 2.5 m and 10 m. Its bread this

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

37. A godown measures 40 m × 25 m × 10 m. Find the maximum number of wooden crates each measuring 1.5 m × 1.25 m × 0.5 m that can be stored in thegodown.

(a)18000 (b)16000 (c)15000 (d)14000

38. A river 3 m deep and 40 m wide is flowing at the rate of 2 km per hour. How much water will fall into the sea in a minute ?

(a)4000m^3 (b)40m^3 (c) 400m^3 (d) 40000m^3

39. The circumference of the base of a cylindrical vessel is 132 cm and its height is25 cm. How many litres of water can it hold?

(a) 33.75 litre (b)34.65litre (c)35.75litre (d) 38.75litre

40. If the lateral surface of a cylinder is 94.2 cm^2 and its height is 5 cm, then find radius of its base

(a) 5cm (b)4cm (c)3cm (d)6cm

41. It costs Rs 2200 to paint the inner curved surface of a cylindrical vessel 10 m deep. If the cost of painting is at the rate of Rs 20 per m^2, find radius of the base,

(a)1.75m (b)1.85m (c)1.95m (d) 1.65m

42. The height and the slant height of a cone are 21 cm and 28 cm respectively. Find the volume of the cone.

(a)5546cm^3 (b) 7546 cm^3 (c)5564m^3 (d) 8546cm^3

43. Find the volume of the right circular cone with radius 6 cm, height 7 cm

(a)254cm^3 (b)264 cm^3 (c) 274cm^3 (d) 284cm^3

44. The radius and height of a conical vessel are 7 cm and 25 cm respectively. Its capacity in litres is

(a) 1.232 litre (b)1.5litre (c)1.35litre (d) 1.6litre

45. The height of a cone is 15 cm. If its volume is 1570 cm^3, find the radius of the base.

(a)12cm (b)10 cm (c)15cm (d) 18cm

46. If the volume of a right circular cone of height 9 cm is $48\pi cm^3$, find the diameter of its base.

(a) 12cm (b)10cm (c)6cm (d) 8cm

47. A conical pit of top diameter 3.5 m is 12 m deep. What is its capacity in kilolitres?

(a)38.5kl (b)48.5kl (c)39.5kl (d) 47.5kl

48. Find the capacity in litres of a conical vessel with radius 7 cm, slant height 25cm

(a) 1.232 litre (b)1.5litre (c)1.35litre (d) none of these

49. The dimensions of a cuboid are 50 cm x 40 cm x 10 cm. Its volume in litres is :

(a) 10litres (b)12litres (c)20litres (d) 25litres

50. The volume of a cuboidal tank is 250 m^3. If its base area is 50 m^2then depth of the tank is

(a)5m (b)200m (c)300m (d) 12500m

Ch. 14. Statistics

1. The range of the data 14, 27, 29, 61, 45, 15, 9, 18 is

A. 61 B. 52 C. 47 D. 53

2. The class mark of the class 120-150 is

A. 120 B. 130 C. 135 D. 150

3. The class mark of a class is 10 and its class width is 6. The lower limit of the class is

A. 5 B. 7 C. 8 D. 10

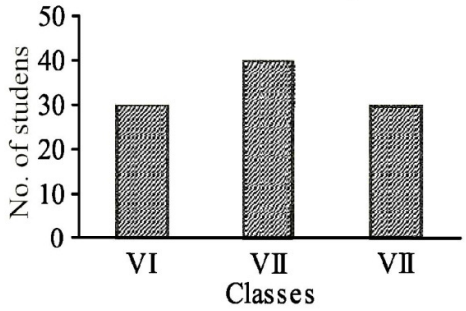
4. In a frequency distribution, the class-width is 4 and the lower limit of first class is 10. If there are six classes, the upper limit of last class is

A. 22 B. 26 C. 30 D. 34

5. The class marks of a distribution are 15, 20, 25, ..., 45. The class corresponding to 45 is

A. 12.5 – 17.5 B. 22.5 – 27.5 C. 42.5 – 47.5 D. None of these

6. The number of students in which two classes are equal.



A. VI and VIII B. VI and VII C. VII and VIII D. None

7. The mean of first five prime numbers is

A. 5.0 B. 4.5 C. 5.6 D. 6.5

8. The mean of first ten multiples of 7 is

A. 35.0 B. 36.5 C. 38.5 D. 39.2

9. The mean of $x + 3$, $x - 2$, $x + 5$, $x + 7$ and $x + 72$ is

A. $x + 5$ B. $x + 2$ C. $x + 3$ D. $x + 7$

10. If the mean of n observations $x_1, x_2, x_3, \ldots\ldots\ldots, x_n$ is $\bar{x}$ then $\sum_{l-1}^{n} x_i - \bar{x}$ is

A. 1 B. –1 C. zero D. can not be found

11. The mean of 10 observation is 42. If each observation in the data is decreased by 12, the new mean of the data is

A. 12 B. 15 C. 30 D. 54

12. The the mean of 10 numbers is 15 and that of another 20 number is 24 then the mean of all 30 observations is

A. 20 B. 15 C. 21 D. 24

13. The median of 10, 12, 14, 16, 18, 20 is

A. 12 B. 14 C. 15 D. 16

14. If the median of 12, 13, 16, $x + 2$, $x + 4$, 28, 30, 32 is 23, when $x + 2$, $x + 4$ lie between 16 and 30, then the value of x is

A. 18 B. 19 C. 20 D. 22

15. If the mode of 12, 16, 19, 16, x, 12, 16, 19, 12 is 16, then the value of x is

A. 12 B. 16 C. 19 D. 18

16. The mean of the following data is

x_i	5	10	15	20	25
fi	3	5	8	3	1

A. 12 B. 13 C. 13.5 D. 13.6

17. Class mark and class size of the class interval are 25 and 10 respectively then the class interval is

(a) 20–30 (b) 30–40 (c) 40–50 (d) 50 –60

18. Class mark of the 1st class interval is 5 and there are five classes. If the class size is 10 then the last class interval is

(a) 20–30 (b) 30–40 (c) 40–50 (d) 50 –60

19. The median of the following data is

x	5	10	15	25	30
f	4	6	7	3	5

(a)10 (b)15 (c)25 (d)30

20. The mode in the above frequency distribution table is

(a)10 (b)15 (c)25 (d)30

21. The mean of the following datais

x	5	10	15	20	25	30
f	4	5	3	2	3	3

(a) 15 (b)16 (c)17 (d) none of these

22. The median of first ten prime numbers is

(a) 11 (b)12 (c)13 (d) none of these.

23. The mean of first ten multiples of 5 is

(a) 45 (b)55 (c)65 (d) none of these.

24. The mean of first ten multiples of 2 is

(a) 11 (b)12 (c)13 (d) none of these.

25. The median of first ten multiples of 3 is

(a) 15 (b)16 (c)16.5 (d) none of these.

26. The median of the following data is

x	10	20	30	40	50	60
f	4	5	6	7	2	3

(a) 20 (b)30 (c)40 (d) none of these

27. The median of the following data is

72	28	65	29	60	30	54	32	53
52	35	51	42	48	45	47	46	33

(a) 45 (b)45.5 (c)46 (d) none of these

28. Calculate the median income from the following data:

Income (in Rs,	10	20	30	40
No. of persons	2	4	10	4

(a) 20 (b)30 (c)40 (d) none of these

29. Class mark of class 150 – 160is

(a) 150 (b)160 (c)155 (d) none of these.

30. Average of numbers: 10, 8, 9, 7, 8is

(a)8.4 (b)7.4 (c)4.8 (d)8.2.

31. Mean of first 10 natural numbers is

(a)6.5 (b)5.5 (c)7.5 (d)8.5.

32. The heights (in cm) of 9 students of a class are as follows: 155, 160, 145, 149, 150, 147, 152, 144,148
Find the median of this data.

(a)150 (b)147 (c)149 (d)148

33. The points scored by a Kabaddi team in a series of matches are as follows

17, 2, 7, 27, 15, 5, 14, 8, 10, 24, 48, 10, 8, 7, 18,28

Find the median of the points scored by the team.

(a)12 (b)15 (c)24 (d)28

34. Find the mode of the following marks (out of 10) obtained by 20 students:
4,6,5,9,3,2,7,7,6,5,4,9,10,10,3,4,7,6,9,9

(a)4 (b)7 (c)10 (d)9

35. 5 people were asked about the time in a week they spend in doing social work in their community.

They said 10, 7, 13, 20 and 15 hours, respectively. Find the mean (or average) time in a week devoted by them for social work.

(a) 12 (b)13 (c)14 (d) none of these.

36. The width of each of five continuous classes in a frequency distribution is 5 and the lower-class limit of the lowest class limit of the lowest class is 10. The upper-class limit of the highest class is:

(a)35 (b)15 (c)25 (d)40

37. Let m be the midpoint and 'l' the upper-class limit of a class in a continuous frequency distribution. The lower-class limit of the class is

(a) 2m+l (b) 2m–l (c) m-l (d) m –2l

38. The class marks of a frequency distribution are given as follows: 15, 20, 25, …… The class corresponding to the class mark 20is

(a) 12.5–17.5 (b) 17.5–22.5 (c) 22.5–27.5 (d) 27.5 –32.5

39. In the class intervals 10 – 20, 20 – 30, the cumber 20 is included in.

(a) 10–20 (b) 20–30 (c) both the interval (d) none of these intervals

40. The mean of 5 numbers is 30. If one number is excluded, their mean becomes 28. The excluded number is

(a)28 (b)30 (c)35 (d)38.

41. Class mark of class 150 – 160is

(a) 150 (b)160 (c)155 (d) none of these.

42. A grouped frequency distribution table with class interval of equal sizes using 250– 270 as one of the class intervals is constructed for the following data:

268, 220, 368, 258, 242, 310, 272, 342, 310, 290, 300, 320, 319, 304, 402, 318, 406,

292, 354, 278, 210, 240, 330, 316, 406, 215, 258, 236

The frequency of the class 310 – 330 is

(a)4 (b)5 (c)6 (d)7.

43. To draw a histogram to representthefollowingfrequencydistribution:theadjustedfrequencyfor the class interval 25 – 45 is

C. I.	5 – 10	10 – 15	15 – 25	25 – 45	45 – 75
F	6	12	10	8	15

(a)6 (b)5 (c)2 (d)3

44. There are 50 numbers. Each number is subtracted from 53 and the mean of the number so obtained is found to be 3.5. The mean of the given number is

(a)46.5 (b)49.5 (c)53.5 (d)56.5

45. If each observation of the data is increased by 5 then their mean

(a) remains the same (b) becomes 5 times the original mean

(c) is decreasedby5 (d) is increased by5.

46. The mean of 25 observations is 36. Out of these observations if the men of first 13 observations is 32

and that of the last 13 observations is 40, the 13th observation is

(a)23 (b)36 (c)38 (d)40.

47. The median of the data 78, 56, 22, 34, 45, 54, 39, 68, 54, 84 is

(a)45 (b)49.5 (c)54 (d)56.

48. For drawing a frequency polygon of a continuous frequency distribution, we plot the points whose ordinates are the frequency of the respective classes and respectively

(a) upper limits of the classes (b) lower limits of the classes

(c) class marks of the classes (d) upper limits of preceding classes.

15. PROBABILITY

1. There are 6 marbles in a box with number 1 to6 marked on each of them. What is the probability of drawing a marble with number 2?

(a) $\frac{1}{6}$ (b) $\frac{1}{5}$ (c) $\frac{1}{3}$ (d) 1

2. A coin is flipped to decide which team starts the game. What is the probability of your team will start?

(a) $\frac{1}{4}$ (b) $\frac{1}{2}$ (c) 1 (d) 0

3. A die is thrown once. What will be the probability of getting a prime number?

(a) $\frac{1}{4}$ (b) $\frac{1}{2}$ (c) 1 (d) 0

Cards are marked with numbers 1 to 25 are placed in the box and mixed thoroughly. One card is drawn at random from the box. Answer the following questions (Q4-Q13)

4. What is the probability of getting a number5?

(a) 1 (b) 0 (c) $\frac{1}{25}$ (d) $\frac{1}{5}$

5. What is the probability of getting a number less than11?

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

6. What is the probability of getting a number greater than25?

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

7. What is the probability of getting a multiple of5?

(a) 1 (b) 0 (c) $\frac{1}{25}$ (d) $\frac{1}{5}$

8. What is the probability of getting an even number?

(a) 1 (b) 0 (c) $\frac{12}{25}$ (d) $\frac{13}{25}$

9. What is the probability of getting an odd number?

(a) 1 (b) 0 (c) $\frac{12}{25}$ (d) $\frac{13}{25}$

10. What is the probability of getting a prime number?

(a) 1 (b) 0 (c) $\frac{12}{25}$ (d) $\frac{13}{25}$

11. What is the probability of getting a number divisible by3?

(a) 1 (b) 0 (c) $\frac{12}{25}$ (d) $\frac{13}{25}$

12. What is the probability of getting a number divisible by4?

(a) $\frac{8}{25}$ (b) $\frac{9}{25}$ (c) $\frac{6}{25}$ (d) $\frac{3}{25}$

13. What is the probability of getting a number divisible by7?

(a) $\frac{8}{25}$ (b) $\frac{9}{25}$ (c) $\frac{6}{25}$ (d) $\frac{3}{25}$

14. A bag has 4 red balls and 2 yellow balls. A ball is drawn from the bag without looking into the bag. What is probability of getting a red ball?

(a) $\frac{1}{6}$ (b) $\frac{2}{3}$ (c) $\frac{1}{3}$ (d) 1

15. A bag has 4 red balls and 2 yellow balls. A ball is drawn from the bag without looking into the bag. What is probability of getting a yellow ball?

(a) $\frac{1}{6}$ (b) $\frac{2}{3}$ (c) $\frac{1}{3}$ (d) 1