CLASS X

QUESTION BANK

ONE MARK QUESTIONS

CHAPTER-1REAL NUMBERS

1. All numbers which can be represented on number line are called----------.

2. Numbers which are not in the form of p/q are called --------.

3. A number is called an irrational number if its decimal expansion is ---------.

4. Euclids division lemma is used to find --------.

5. The HCF of two prime numbers is always -------

6. Two numbers are called twin prime numbers if they differ by --------.

7. The number which is neither prime nor composite is ---------.

8. The LCM of two prime numbers is always their -------.

9. For two positive integer a and b

HCF(a,b) × LCM(a,b) = ----- × -----.

10. Which number is divisor of every non zero integer?

11. The decimal expansion of a non zero number will be terminating if its denominator is of the form ----------.

Q12.Define rational numbers.

Q13.Define irrational numbers.

Q14.Write Euclid's division lemma .

Q15.If HCF of 306 & 657 is 9 then find LCM.

Q16:Write the HCF of the smallest composite number & the smallest prime number.

Q 17:Find LCM & HCF 120 & 144 by fundamental theorem of arithmetic.

Q18: What are coprime numbers?

19.Which of the following is terminating?

(a) $\frac{21}{2\times5}$ (b) $\frac{34}{5\times3}$ (c) $\frac{11}{3}$ (d) $\frac{39}{3^5\times27}$

20. The (HCF × LCM) of the numbers 60 & 40 is

(a) 1200 (b) 2000 (c) 1800 (d) 2400

21. Find the HCF × LCM of 40 & 16.

22. Is $\frac{21}{2^3\times5^6}$ terminating?

23. $\frac{33}{2^2\times5}$ Terminates after how many places?

24. What is the LCM of a two co-prime numbers?
25. What is the HCF of two consecutive numbers?
26. HCF of 65 and 117 is 65n – 117. Find n.
27. If p and q are co-prime, find HCF (p, q).
28. If d = HCF (48, 80), then find d.
29. Check whether 12/15 is terminating or not?
30. What is HCF are two consecutive natural numbers?
31. Check whether 14/35 is terminating or not?
32. Check whether $\frac{66}{180}$ is terminating or not?
33. A rational number can be expressed as a terminating decimal if the denominator has factors (a) 2, 3 or 5 (b) 2 or 3 (c) 3 or 5 (d) 2 or 5

Q 34]. State the Fundamental theorem of Arithmetic.

Q 35].True or False statement

a) Number of the form 2n +1 where n is any positive integer are always odd number
b) Product of two prime number is always equal to their LCM
c) √3X √12 is a irrational number
d) Every integer is a rational number
e) There are infinite integers between two integers
f) There are finite rational number between 2 and 3
g) √3 Can be expressed in the form √3/1,so it is a rational number
h) The number 6^n for n in natural number can end in digit zero
i) Any positive odd integer is of the form 6m+1 or 6m+3 or 6m +5 where q is some integer

Q 36].the HCF (a, b) =2 and LCM (a, b) =27. What is the value a X b

a) 25
b) 9
c) 27
d) 54

Q 37]. 2+√2 Is a

a) Non terminating repeating
b) Terminating
c) Non terminating non repeating
d) None of these

Q 38]. If a and b are co primes which of these is true
a) LCM (a, b) =aXb
b)HCF (a, b)=axb
c) a=br
d) None of these

Q 39:If $n = 2^3 \times 3^4 \times 7 \times (15)^6$, find the number of consecutive zero's in natural number n.

Q 40:Use Euclid's Division Alogrithm to find the HCF of 450 and 125.

Q 41:Th HCF and the LCM of two numbers are 12 and 360 respectively .If one number is 36, find the other number.

Q 42:Use Euclid's Division Alogrithm to find whether the pair of number 615, 154 is coprime or not.

Q.43) How many prime factors are there in prime factorization of 5005?

Q.44) Find the product of HCF and LCM of the smallest prime number and smallest composite Number.

Q.45) Find the HCF X LCM for the numbers 50 and 20

Q.46) For the decimal number 0.666……, find the rational number.

Q.47) Write two examples of perfect number

Q.48) What is the number of rational numbers lying between $\sqrt{2}$ and $\sqrt{3}$

Q.49) Is the product of two irrational numbers always an irrational number?

Q.50) Write the rational number which has non terminating decimal expansion.

Q.51) Is it true to say that the decimal expansion of π is nonterminating and recurring?

Q.52) Write the decimal expansion of $\frac{3}{8}$

Q.53) Find the least positive integer divisible by 20 and 24.

Q.54) What is the reciprocal of an irrational number ?

Q55) What are the factors of denominator if a rational number can be expressed as a terminating decimal?

Q.56) Write two examples of twin primes.

Q.57) If the LCM of 12 and 42 is 10m + 4, then what is the value of m ?

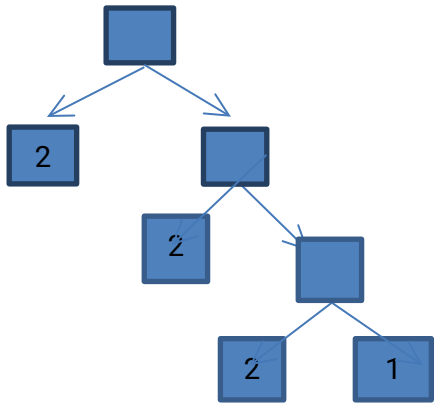
Q.58) what is the largest number which divides 70 and 125 leaving the remainder

5 and 8 respectively?

Q 59: If $a = 2^3.3^5$ and $b = 3^2.2^5$, then what is the HCF of a and b.

Q 60 : State Whether 7× 11 ×13 +13 is prime or composite.

Q 61. Find the missing number in the following factorization.



62. What are the possible values of the remainder r, when a positive integer a is divided by 3?

63. What is the H.C.F of $3^3 \times 5$ and $3^3 \times 5^2$?

Q 64. Can two numbers have 18 as their H.C.F and 380 as their LCM? Give reason.

Q 65.Write the decimal expression of $\frac{16}{3125}$ without actual division.

Q 66.Euclid division lemma states that for two positive integer a and b , there exist unique integer q and r such that a = b q + r what r must satisfy.

Q 67. After how many decimal places, will the decimal expansion of $\frac{23457}{2^3 5^4}$ terminate?

Q 68. What is the exponent of 3 in the prime factorisation of 864 ?

Q.69 For some integer m, every even integer is of the form

(A) m (B) m + 1 (C) 2m (D) 2m + 1

Q.70 $n^2 - 1$ is divisible by 8, if n is

(A) an integer (B) a natural number (C) an odd integer (D) an even integer

QUESTION BANK

ONE MARK QUESTIONS

REAL NUMBERS

Answer

Ans-1- Real number.

Ans-2 Irrational number.

Ans- 3 Non-terminating non-recurring.

Ans- 4: HCF.

Ans-5: 1 .

Ans 6 : 2.

Ans 7: 1.

Ans 8 : Product.

Ans 9: a × b.

Ans 10 : 1.

Ans 11 : 2^m5^n.

Answer 12: A number that can be expressed in form of p/q, where p & q are integers & q does not equal to zero, is called rational number.e.g. ¼, 7/9,13/15 , etc.

Ans 13 : A number that can not represent in form of p/q where p& q are integers & q does not equal to zero,is called irrational numbers.

Ans 14:Euclid's division lemma states that, for any two positive integers a & b, there exist two unique whole numbers, say q & r such that a=bq+r where ris greater than 0, & less than equal to b.

Ans 15 :LCM X HCF=product of both numbers.

LCM= 306X657/9

=34x657

=22338

Answer 16: smallest composite number =4

Smallest prime number= 2

HCF(4,2)=2

(Since HCF is the product of the smallest power each common prime factor involved in the numbers)

Answer 17:Prime factors of 120=2x2x2x3x3

prime factors of 144=2x2x2x2x3x3

by using fundamental theorm of arithmetic-

LCM(120,144)=2X2X2X2X3X3X5

LCM=720

HCF(120,144)= HCF =24

Ans 18 : Those number which do not have any common factor other than 1,

19. a
20. d
21 640
22 Yes
23Two
24 Product of two co-prime numbers.
25 1
26 2
27 1
28 16
29 Yes
30 1

31 Yes
32 No
33 d

Ans 34 : Correct theorem

Solution 35 :

a. True
b. True
c. False, as it is written as 6
d. True ,as any integer can be expressed in the form p/q
e. False,There are finite integer between two integers
f. False
g. False
h. False
i. True

Solution 36: (d)
LCM X HCF=aXb

Solution 37 : (c)
Solution 38: a
SOL 39:3.

SOL 40: 25

SOL 41:120

SOL 42: Coprime.

ANS 43: 4

ANS 44: 8

ANS 45: 1000

ANS 46: 2/3

ANS 47: 6, 28

ANS 48: Infinitely many

ANS 49: NO

ANS 50: 1/3

ANS 51: No

ANS 52: 0.375

ANS 53: 120

ANS 54: Irrational

ANS 55: 2X5

ANS 56: 2, 3 and 3, 5

ANS 57: 8

ANS 58: 18

ANS 59: HCF(a,b)= 72

Ans 60: Composite

(Ans 61 : 136,68,34)

Ans 62: r = 0,1 or2

Ans 63 : 45

Ans 64: No, because HCF (18) does not divide LCM (380)

Ans 65: 0.00512

Ans 66: $0 \leq r < b$

Ans 67 : After 4 decimal places

Ans 68: 3

Solution 69: Answer (C)

Solution 70 : Answer (C)

CLASS X

QUESTION BANK (ONE MARK)

CHAPTER -2 POLYNOMIAL

Q 1. What is the degree of a linear polynomial?

Q 2. What is the degree of a constant polynomial?

Q 3 . If α and β are two roots of a quadratic polynomial $p(x) = ax^2+bx+c$ then what will be -

α + β = ? and α × β = ?

Q 4. The zero of polynomial p(x) = 2x-4.

Q5;define zero polynomial.

Q6; what is Biquadratic Polynomial?

Q.7:Find a quadratic polynomial, whose sum & product of whose zeroes are -3 & 2 respectively.

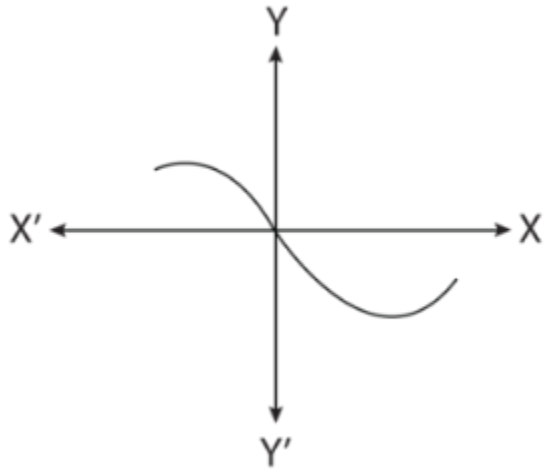
Q.8: If one zero of 2x -3x + k is reciprocal to other then find the value of k.

Q. 9 Define degree of polynomial.

Q 10. Find the quadratic polynomial whose zeroes are −2 & 3.

Q 11. Find a quadratic polynomial whose zeroes are 2 + √3 and 2 − √3

Q 12. Find the no. of zeroes of the polynomial y = f(x)



Q 13. If −3 is a zero of the polynomial $x^2 + x - (3 + 2k)$ then find the value of k.

Q 14. If f(x) = x + 1, then 3f(2) − 2f(3) = _____
(a) 0 (b) 1 (c) 2 (d) 3

Q 15. If x = 1 is a zero of the polynomial $F(x) = x^2 - 5x + k$, then the value of k is:
(a) 4 (b) −4 (c) 6 (d) −6

Q 16. The roots of the equation $ax^2 + bx + c = 0$ will be reciprocal of each other if :

(a) $a = b$ (b) $a = bc$

(c) $a = c$ (d) $b = c$

Q 17. If the sum of the zeroes of the quadratic polynomial $f(x) = kx^2 - 2x + 3$ is 3 find k.

Q 18]. True or False statement

1. P(x) =x-1 and g(x) $=x^2$-2x +1 . p(x) is a factor of g(x)
2. The factor of $3x^2$ –x-4 are (x+1)(3x-4)
3. Every linear polynomial has only one zero
4. Every real number is the zero's of zero polynomial
5. A binomial may have degree 6
6. 1,2 are the zeroes of x^2-3x+2
7. The degree of zero polynomial is not defined
8. Graph of polynomial (x^2-1) meets the x-axis at one point
9. Graph of constant polynomial never meets x axis

Q.19. What is the value of a if (x+1) is a factor of $x^2 - 3ax + 3a-7$

Q.20 How many maximum number of zeroes that a polynomial of degree 3 can have ?

Q.21 If α and β are the zeroes of the polynomial $2x^2 + 3x + 5$, then find the value

Of $\frac{\alpha+\beta}{\alpha\beta}$

Q.22 What is the degree of non-zero constant polynomial?

Q.23 What are the zeros of the polynomial $t^2 - 15$?

Q.24 At which point the graph of the polynomial 2x – 5 ,intersects the X – axis ?

Q 25: What is the value of k , if -4 is a zero of the polynomial x^2-x-(2k+2) ?

Q 26. If α and β are the zeroes of a polynomial such that $\alpha + \beta = -6$ and $\alpha\beta = -4$, then write

the polynomial.

Q 27. If the two zeroes of the quadratic polynomial $7x^2 - 15x - k$ are reciprocal of each other, then find the value of k.

Q 28.If α and β are the zeros of the polynomials $p(x) = x^2 - 5x + 6$ then find the value of $\alpha + \beta - 3\alpha\beta$

Q 29.I f one root of the polynomials $p(x) = 5x^2 + 13x + m$ is a reciprocal of the other, then find the value of m.

Q 30 .State Division Algorithm for polynomials.

Q 31 .For what value of k, --3 is a zero of the polynomial $x^2 + 11x + k$?

Q 32 .If α, β are the zeroes of the polynomial $2y^2 + 7y + 5$, writr the value of $\alpha + \beta + \alpha\beta$

Q 33. The zeroes of the quadratic polynomial $x^2 + 99x + 127$ are
(A) both positive (B) both negative(C) one positive and one negative (D) both equal

Q.34 What number is to be added to the polynomial $x^2 - 5x + 4$, so that 3 is the zero of the polynomial ?

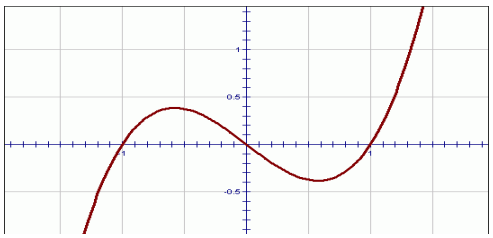
Q.35 What is the coefficient of the first term of the quotient when

$2x^2 + 3x + 1$ is divided by $x + 2$?

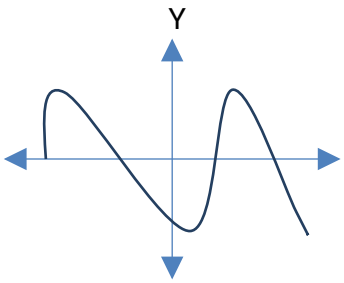
Q 36 If $x+2$ is a factor of $x^2 + ax + 2b$ and $a+b=4$ find a and b.

Q 37 If one zero of $2x^2 - 3x + k$ is reciprocal to the other, then find the value of k.

Q 38. The graph of a polynomial is given. Write the number of zeros.



Q 39:The graph of y = p(x) is given below for some polynomial p(x). Find the number of zeroes of p(x).



CLASS X

QUESTION BANK (ONE MARK) CHAPTER -3 POLYNOMIAL

ANSWERS

Ans 1: - 1.

Ans 2 :- 0.

Ans 3: -b/a and c/a.

Ans 4: x = 2.

Ans 5; A polynomial having all coefficient equal to zero, is called zero polynomial .e.g. f(x)=0, p(x)=0 X x^2

Ans 6:A polynomial of degree four, is called biquadratic polynomial.

Answer 7: Given that, sum of zeroes =-3

Product of zeroes pq = 2

Ans 8: Given polynomial $2x^2-3x+k$
Let p &1\p are two zeroes of given polynomial
Then product of zero p.\p=constant term
Constant term\coefficient of x^2
1=k\2
K=2

Answer 9: The highest power of x in a polynomial p(x) is called degree of polynomial.

Ans 10: $x^2 + 2x + 3$

Ans 11: $x^2 - 4x + 1$

Ans 12: 1

Ans 13: $k = \frac{3}{2}$

Ans 14: b (1)

Ans 15: a (4)

Ans 16 : d (b = c)

Ans 17: $k = \frac{2}{3}$

Answer 18:

1. True, as g(1)=0
2. True, we can get this by split method
3. True
4. True
5. True , example $x^6 + 1$
6. True
7. True
8. False as it meets at two points
9. True

Ans 19: a=1

Ans 20: Three zeroes

Ans 21 : − 3/2

Ans 22 : Zero

Ans 23 : $\sqrt{15}$,$-\sqrt{15}$

Ans 24 : x= 5/2

ANS 25: k= 9

Ans 26 : $x^2 + 6x - 4$

Ans 27: k = -7

Ans 28: $\alpha + \beta - 3\alpha\beta = 5 - 3 \times 6 = -13$

Ans 29: m=5

Ans 30 : p(x)=g(x)q(x)+ r(x) 0<=r(x)<g(x)

Ans 31 :(k = 24)

Ans 32: (--1)

Solution 33: Answer (A).

ans .34 : +2

ans.35: 2

Ans 36:. a=3,b=1

Ans 37: . k=2

Ans 38 : 3 zeros

Ans 39 : Four

CHAPTER-3

PAIR OF LINEAR EQUATIONS IN TWO VARIABLES

Q 1. How many solutions does a linear equation in one variable have?

Q 2. If two lines are parallel to each other then the system is said to be------.

Q3: For which value of p, the pair of equation 6x + 5y=4 and 12x +py =-8 has no solution?

Q 4. Find k for which 5x + 10y – 2 = 0 and 10x + ky + 4 = 0 lines are parallel to each other.

Q 5. Identify the nature of solution
2x + 3y + 5 = 0
4x + 6y + 10 = 0

Q 6. Check whether the following system of equations is consistent or not.
2x + 3y = −8, 4x + 6y = 16

Q 7. A pair of linear equations are given by 3x + 4y = 5, 6x + 8y = 7. Find the nature of the lines.

Q 8. For what value of k, 2x + 3y = 7
4x + ky = 14 has infinitely many solutions?

Q 9. The system of equation $x - 4y = 8$, $3x - 12y = 24$

(a) Has infinitely many solution
(b) Has not solution
(c) Has a unique solution
(d) May or may not have solution

Q 10. Check whether $x = 1$, $y = -2$ is a solution of the system of simultaneous linear equations

$2x + y = 0$
$x - y = 3$

Q.11 For what value of k, $2x + 3y = 4$and $(k+2)x + 6y = 3k + 2$ will have

Infinitely many solutions ?

Q.12 Write the value of k for which the system of equations $x + ky = 0$,$2x - y = 0$. Has unique solution.

Q.13 What type of lines does the equations $x = 0$ and $y = 0$ represent ?

Q.14 In which quadrant the point (!, 2) lies ?

Q.15 What is the value of p if the line $y = px - 2$ passes through the point (3, 2) ?

Q.16 What is the area of triangle formed by the co-ordinate axes and the line $x + y = 6$?

Q.17 Find the numbers if their sum is 8 and difference is 2.

Q.18 For what values of k, will the pair of linear equations $kx + 2y = 5$ and $3x + y = 1$ have unique solution

Q.19 If the lines given by $3x + 2ky = 2$ and $2x + 5y + 1 = 0$ are parallel,

Then find the value of k

Q.20 The difference between two numbers is 26 and one number is

Three times the other number. Find them.

Q.21 The larger of two supplementary angles exceeds the smaller

by 18°. Find them.

Q 22: Find the number of solution for yhr following pair of equations : x+2y-8=0 and 2x+4y= 16.

Q 23: Find the value of k so that the system of equations has no solution.

3x-y-5=0 ; 6x-2y-k=0

Q 24: : Is x=3 and y=4 a solution of the equation 4x+3y-30=0?.

Q 25 Show that the pair of equations 2x-3y=6, x + y=1. has a unique solution.
Q 26 Show that the pair of equations 2y=4x-6, 2x=y+3, has infinite solutions.
Q 27 For what value of k, 2x+3y=4, (k+2) x+6y=3k+2 will have infinitely many solutions.
Q 28 Is the pair of equations : x+2y-4=0,
Q 29 Solve algebraically the pair of equations:

2 x-y=5,
3x+2y=11

Q 30 Solve by the method of cross multiplication the pair of equations:

2 x +3y +8=0
4x +5y +14=0

Q 31 For what value of k, the point (3, k) lies on the line 2x – 3y = 5

Q 32Sum of two numbers is 35 and their difference is 13. Find them.

Q 33 : The sum of the digits of a two-digit number is 9. If 27 is added to it, the digits of the number get reversed. The number is
(A) 25 (B) 72 (C) 63 (D) 36

Q 34. Graphically, the pair of equations
$6x - 3y + 10 = 0$
$2x - y + 9 = 0$ represents two lines which are

(A) Intersecting at exactly one point. (B) Intersecting at exactly two points.
(C) Coincident. (D) Parallel.

Q 35. The pair of equations $x + 2y + 5 = 0$ and $-3x - 6y + 1 = 0$ have
(A) a unique solution (B) exactly two solutions
(C) Infinitely many solutions (D) no solution

Q 36. If a pair of linear equations is consistent, then the lines will be
(A) parallel (B) always coincident
(C) intersecting or coincident (D) always intersecting

Q 37. The pair of equations $y = 0$ and $y = -7$ has

(A) one solution (B) two solutions
(C) infinitely many solutions (D) no solution

Q 38. The pair of equations $x = a$ and $y = b$ graphically represents lines which are
(A) parallel (B) intersecting at (b, a)
(C) coincident (D) intersecting at (a, b)

Q 39. For what value of k, do the equations $3x - y + 8 = 0$ and $6x - ky = -16$ represent coincident lines?
(A) 1/2 (B) -1/2 (C) 2 (D) -2

Q 40. Find the value of k so that the following system of equations has no solution
3x-y-5=0, 6x-2y+k=0

Q 41. Find the value of k so that the following system of equations has infinite Solution: 3x-y-5=0, 6x-2y+k=0.

Q 42. Find the value of a so that the point (3, a), lies on the line represented by 2x-3y=5.

Q 43. Find the number of solutions of the following pair of linear equations
X + 2y − 8 = 0, 2x + 4y = 16.

Q 44. Write whether the following pair of linear equations is consistent or not
X + y = 14, x − y = 4.

Q 45. If x = a, y = b is the solution of the equation x-y=2 and x+y=4, then find the values of a and b.

Q 46. For what values of k, will the pair of linear equations,kx+2y=5 and 3x+y=1 have unique solution?

Q 47. If $ax + by=a^2-b^2$ and $bx + ay=0$, then find the value of (x+y).

Q 48. For what value of p will the following system of equations have no solutions?
(2p-1)x+(p-1)y=2p+1 and y+3x-1=0.

Q 49. Prove that the lines representing the linear equations 2x-y=3 and 4x-y=5 Intersect at a point.

Q 50. Find the co-ordinate where the lines x-y=8 will intersect y-axis.

Q 51 Do the equations 4x+3y-1=5 and 12x+9y=15 represent a pair of coincident lines?

Q 52. The area of the triangle formed by the coordinate axis and the line x+y=6 is---
(a) 6 (b) 12 (c) 18 (d) 36.

CHAPTER-3

PAIR OF LINEAR EQUATIONS IN TWO VARIABLES

ANSWERS

Ans 1:- Only one.

Ans 2:- Inconsistent.

Answer 3: Given, pair of linear equation is

$6x+5y=4$ & $12x + py = -8$

here $a_1=6, b_1=5, c_1=-4$

$a_1=12, b_2=p, c_2 = 8,$

For no solution $a_1/a_2=b_1/b_2 =c_1/c_2$

$6/12=5/q$ does not equal to $-4/8$

P=10

Ans 4: k = 20
Ans 5:Infinitely many solution, co-incident lines
Ans 6 : Not consistent
Ans 7: Lines are parallel, no solution, Inconsistent
Ans 8 : k = 6
Ans 9 : a (has infinitely many solutions)
Ans 10: Yes
Ans 11: K= 2

Ans 12: $K \neq -\frac{1}{2}$

Ans 13: Intersecting lines

Ans 14: First quadrant

Ans 15:4/3

Ans 16: 18 units

Ans 17: 3, 5

Ans 18: $k \neq 6$

Ans 19: k = 15/4

Ans 20: 13, 39

Ans 21: 99, 81

ANS 22: pair of linear equations has an infinite number of solution

ANS 23: $k \neq 10$.

ANS 24: Is not a solution.

(Ans 27:k=2)

Ans 28 : 2x+4y-2=0 consistent.
(Ans 29: .x=3 ,y=1)
Ans 30: (-1, -2))
Ans 31: (k = 1/3)

Ans 32 : (24,11)

Solution 33 : Answer (D)
Solution 34: Answer (D)
Solution 35: Answer (D)
Solution 36: Answer (C)
Solution 37: Answer (D)
Solution 38: Answer (D)
Solution 39: Answer (C)
Ans.40: $k \neq 10$

(Ans41:. k = -10)

(Ans 42:. a= 1/3)

(Ans.43: Infinite many solutions)

(Ans 44:. Consistent)

(Ans 45:. a=3, b=1)

(Ans 46: $k \neq 6$)

(Ans 47: x+y = a-b)

(Ans 48: p=2)

(Ans 49:. ($\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$), unique solution)

(Ans 50: (0, -8))

(Ans 51: Not represent a pair of coincident lines.)
(Ans 52: (c) 18)

X QUESTION BANK

CHAPTER-4QUADRATIC EQUATION

Q 1. What is the general form of a quadratic equation?

Q 2. What is the degree of quadratic equation?

Q 3. How many roots does a quadratic equation have?

Q 4. In equation $ax^2+bx+c = 0$, what are a, b and c?

Q 5. The nature of roots of a quadratic equation depends on its-----.

Q 6. The discriminant of a quadratic equation is given by ---------.

Q 7. A quadratic equation have two distinct roots if discriminant is -------.

Q 8. A quadratic equation have two equal roots if discriminant is -------.

Q 9. A quadratic equation have no real roots if discriminant is -------.

Q 10. What is quadratic formula for $ax^2+bx+c = 0$?

Q 11. Is 2 a root of quadratic equation $2x^2+7x+6 = 0$? Why?

Q 12. Is -5 a root of equation $x^2+2x-15 = 0$?

Q 13. The positive real root of the equation $81x^2-1 = 0$ is?

Q 14. If α and β are two roots of a quadratic equation then quadratic equation is given by?

Q.15:What is discriminant of quadratic equation.

Q.16: What is condition for two equal real root?

Q.17: For what value of p, the equation $px^2-18x+1=0$ is a perfect square?

Q.18:Find the discriminant of quadratic equation $x^2 -4x +1=0$

Q.19: what is quadratic formula?S

Q 20 If $ax^2+bx+c=0$ has equal roots then find the value of c.

Q 21. Find k for which the sum & product of the roots of quadratic equation $kx^2 - 4x + 4k = 0$ are equal.

Q 22. Find the value of K for which $x^2 - (K + 1)x + 4 = 0$ has equal roots.

Q 23. The square root of $9x^2 + 30xy + 25y^2$ is ……..

(a) $3x + 5y$ (b) $3x - 5y$

(c) $-3x + 5y$ (d) $9x + 25y$

Q 24. Factorize : $x^2 - x - 12 = 0$

Q 25. If $x^2 + 5kx + 16 = 0$ has no real roots, then

(a) $k > \frac{8}{5}$ (b) $k > -\frac{8}{5}$

(c) $-\frac{8}{5} < k < \frac{8}{5}$ (d) $0 < k < \frac{8}{5}$

Q 26. If $x^2 + 5kx + 16 = 0$ has no real roots, then :

(a) $k > \frac{8}{5}$ (b) $k > -\frac{8}{5}$

(c) $-\frac{8}{5} < k < \frac{8}{5}$ (d) $0 < k < \frac{8}{5}$

Q 27. The quadratic equation, whose roots are $2 + \sqrt{3}$, $2 - \sqrt{3}$, will be _____

(a) $x^2 + 4x + 1 = 0$ (b) $x^2 - 4x + 1 = 0$

(c) $x^2 + 4x - 1 = 0$ (d) $x^2 - 4x - 1 = 0$

Q 28. Find the quadratic equation having roots $(1 + \sqrt{2})$ and $(1 - \sqrt{2})$.

Q 29. If $f(x) = x^2 + 4x - 12$, what are the zeroes 'f'?

(a) $\{-6, 2\}$ (b) $\{6, 2\}$

(c) $\{3, 2\}$ (d) $\{-3, -2\}$

Q 30. If the roots of an equation $px^2 + qx + r = 0$ are equal, then

(a) $q^2 = pr$ (b) $q^2 = 4pr$

(c) $p^2 = 4qr$ (d) $p = qr$

Q 31. If the roots of a quadratic equation are 2 and −3, then the quadratic equation as :

(a) $x^2 + x + 6 = 0$ (b) $x^2 - x - 6 = 0$

(c) $x^2 + x - 6 = 0$ (d) $x^2 - x + 6 = 0$

Q 32. The roots of the equation $x^2 - 8x + 12 = 0$ are …….

(a) Real, and irrational (b) Real, and rational

(c) Real and equal (d) Unreal.

Q 33. Is x = −3 a solution of the equation $x^2 - 3x + 7 = 0$?

Q 34. Show that x = −2 is a solution of the equation $2x^2 - 4x - 16 = 0$

Q 35. Represent (x − 2) (3x + 5) = 2x(x − 4) is form of a quadratic equation.

Q 36. Find the roots of the quadratic equation $x^2 - 7x$.

Q 37. What is the value of D if the roots of equation $ax^2 + bx + c = 0$, $a \neq 0$ are real and unequal ?

Q 38. Find the discriminant of the quadratic equation

$2\sqrt{5}x^2 + 8x + \sqrt{5} = 0$

Q 39. Write the nature of roots of quadratic equation $3x^2 + 4\sqrt{3}x + 6 = 0$

Q 40. Check whether the following are quadratic equations

i. $(x+1)^2=2(x-3)$
ii. $x^2 - 2x=(-2)(3-x)$
iii. $(x-2)(x+1)=(x-1)(x+3)$
iv. $(x - 3)(2x +1) = x(x + 5)$
v. $(2x - 1)(x - 3) = (x + 5)(x - 1)$ $x^2 + 3x + 1 =$
vi. $(x - 2)^2$
vii. $(x + 2)^3 = 2x(x^2 - 1)$
viii. $x^3 - 4x^2 - x + 1 = (x - 2)^3$

Q 41: If the roots of the quadratic equation $(a - b)x^2 + (b - c)x + c - a = 0$ are equal,prove that 2n = b + c.

Q 42:Solve $2x^2 - 5x + 3$ 0.

Q 43:Find whether the quadratic equation $x^2 - x + 2 = 0$ has real roots or not.If yes,find the roots.

Q 44:The product of two consecutive posistive integer is 72. Find the integers.

Q 45:Find the value of k for which the roots of quadratic equation,$kx^2 - 5x + k = 0$ are real and equal.

Q 46:Find the discriminant of the quadratic equation $2x^2 - 4x + 3 = 0$ and hence find the nature of roots.

Q 47:Find the value of k for which $3x^2 + 2x + k = 0$ has equal roots.

Q 48 If $ax^2 + bx + c = 0$, has equal roots, what is value of c ?

Q 49. If arithmetic mean of two numbers a and b is 8 and ab = 9, find a quadratic equation whose roots are a and b.

Q 50 If $2x^2 - (2 + k)x + k = 0$ where k is a real number, find the roots of the equation.

Q 51. If 1/2 is a root of the equation $x^2 + kx - 5/4 = 0$, then the value of k is
(A) 2 (B) – 2 (C) 1/4 (D) 1/2

Q 52 Which of the following equations has the sum of its roots as 3?
(A) $2x^2 - 3x + 6 = 0$ (B) $-x^2 + 3x - 3 = 0$ (C) $\sqrt{2}x^2 + 3x/\sqrt{2} + 1 = 0$ (D) $3x^2 - 3x + 3 = 0$

Q 53 Values of k for which the quadratic equation $2x^2 - kx + k = 0$ has equal roots is
(A) 0 only (B) 4 (C) 8 only (D) 0, 8

Q 54 Which constant must be added and subtracted to solve the quadratic equation $9x2 + 3x/4 - \sqrt{2} = 0$ by the method of completing the square?
(A) 1/8 (B) 1/64 (C) 1/4 (D) 9/64

Q 55 The quadratic equation $2x^2 - 5x + 1 = 0$ has
(A) two distinct real roots (B) two equal real roots
(C) no real roots (D) more than 2 real roots

Q 56 Which of the following equations has two distinct real roots?
(A) $2x^2 - 3\sqrt{2}x + 9/4 = 0$ (B) $x^2 + x - 5 = 0$ (C) $x^2 + 3x + 2\sqrt{2} = 0$ (D) $5x^2 - 3x + 1 = 0$

Q 57 Which of the following equations has no real roots?
(A) $x^2 - 4x + 3\sqrt{2} = 0$ (B) $x^2 + 4x - 3\sqrt{2} = 0$
(C) $x^2 - 4x - 3\sqrt{2} = 0$ (D) $3x^2 + 4\sqrt{3}x + 4 = 0$

Q 58 $(x^2 + 1)^2 - x^2 = 0$ has
(A) four real roots (B) two real roots
(C) no real roots (D) one real root.

Q 59 The quadratic equation $2x^2 - 5x + 1 = 0$ has
(A) two distinct real roots (B) two equal real roots
(C) no real roots (D) more than 2 real roots

Q 60. Which of the following equations has two distinct real roots?
(A) $2x^2 - 3\sqrt{2}x + 9/4 = 0$ (B) $x^2 + x - 5 = 0$ (C) $x^2 + 3x + 2\sqrt{2} = 0$ (D) $5x^2 - 3x + 1 = 0$

Q 61 Which of the following equations has no real roots?
(A) $x^2 - 4x + 3\sqrt{2} = 0$ (B) $x^2 + 4x - 3\sqrt{2} = 0$

(C) $x^2 - 4x - 3\sqrt{2} = 0$ (D) $3x^2 + 4\sqrt{3}x + 4 = 0$

Q 62 $(x^2 + 1)^2 - x^2 = 0$ has
(A) four real roots (B) two real roots
(C) no real roots (D) one real root.

Q.63 If a positive number is subtracted from $\frac{1}{4}$ th of its square, the result

Is 48. Find the number.

Q. 64 Find the nature of the roots of the quadratic equation

$$\sqrt{2}\,x^2 - \frac{3}{\sqrt{2}} + \frac{1}{\sqrt{2}} = 0$$

Q.65 Check whether $\sqrt{5}\,x^2 + 6x + 3 = 0$ is a quadratic equation or no.

Q.66 Write the roots of a the equation $\sqrt{2x^2+9} = 9$

CHAPTER-4QUADRATIC EQUATION

ANSWERS

Ans 1: - $ax^2+bx+c = 0$.

Ans 2 :- 2.

Ans 3 :- 2.

Ans 4 :- Real numbers.

Ans 5 :- Discriminant.

Ans 6 :- $D = \sqrt{b^2-4ac}$

Ans 7:- Greater than zero.

Ans 8:- Equal to zero.

Ans 9:- Less than zero.

Ans 10:- $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

Ans 11:- Yes. It satisfies the equation.

Ans 12:- Yes.

Ans 13 :- 1/9.

Ans 14 :- $x^2-(\alpha + \beta)x+ \alpha\beta = 0$

Answer 15:If a quadratic equation in the form of $ax^2+bx+c=0$ where a does not equal to zero.

$D= b^2- 4ac$ is called discriminan.

Answer 16: When $D=0$ i.e. $b^2-4ac=0$ then quadratic equation has two real roots.

Answer 17: Value of p is 81. Then equation is perfect square.

Ans 18:So discriminant is 12.

Answer 19: quadratic formula is-

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

Where a, b, c are real numbers , $a \neq 0$

Ans 20 :$c=b^2/4a$

Ans 21: k =1

Ans 22:k = -5, k = 3

Ans 23: (a) (3x + 5y)

Ans 24: (x – 4) (x + 3)

Ans 25:(d) $0 < k < \frac{8}{5}$

Ans 26: (d) $0 < k < \frac{8}{5}$

Ans 27: (b) $x^2 - 4x + 1 = 0$

Ans 28: $x^2 - 2x - 1 = 0$

Ans 29: (a) (-6, 2)

Ans 30: (b) $q^2 = 4pr$

Ans 31: (c) $x^2 + x - 6 = 0$

Ans 32: (b) real and rational

Ans 33: No

Ans 34: Yes

ANs 35: $x^2 + 7x - 10 = 0$

Ans 36: x = 0, x = 7

Ans 37 : $b^2 - 4ac < 0$

CHAPTER 5:ARITHMETIC PROGRESSIONS

1. For what value of p, are 2p – 1, 7 and 3p, three consecutive terms of AP ?

   1. p = 3

2. For what value of p, are 2p + 1, 13 and 5p – 3, three consecutive terms of AP ?

   2. p = 4

3. If $\frac{4}{5}$, a, 2 are three consecutive terms of AP, find value of a.

   3. $a = \frac{7}{5}$

4. Write the value of x for which x + 2, 2x, 2x + 3 are three consecutive terms of AP.

   4. x = 5

5. Determine k s that 3k – 2, 4k – 6, k = 2 are three consecutive terms of AP.

   5. k= 3

6. Write the common differences of AP whose nth term is 3n +5.

   6. d = 3

7. The nth term of an AP is 7 – 4n. Find its common difference.

   7. d = -4

8. The nth term of an AP is 6n + 2. Find its common difference.

8. d = 6

9. Write next term of the AP :$\sqrt{2}$, $\sqrt{8}$, $\sqrt{18}$

9. $4\sqrt{2}$

10. Find the 4^{th} term from the last term (towards the first term) of the AP : 4, 9, 14....

10. 239

11.What is progressions.

12. Define arithmetic progression.

13.:Examin that is the sequence 13,10, 7, 4,……. Is an AP.

14. Write formula of finding n^{th} term of AP.

15: How we find the last term of AP.

11. 16.If 2x – 1, 2x – 3 and x + 4 are in A.P. find x.

17.. If 2x – 1, x and x + 4 are in AP find x.
18.. In an A.P if d = −3, a = 15 and a_n = 0 find n.
19.. Find the 15^{th} term from the last term of the AP. 11, 8, 5, …… −64.
20.. Find the 23^{rd} term of the AP 3, 0, −3, ….
21.. Find the sum of first 20 odd natural numbers.
22.. Which of the following is not an AP?
(a) 3, 6, 9, 12, ….. (b) 21, 17, 13, 9, …..
(c) 2, 5, 8, 11, ….. (d) 13, 15, 18, 22,….
23. If the common difference of an AP. is 4, then find $a_{30} - a_{25}$.
24. If d = −3, n = 4 and a_n = 0, find a.
25. Find the next two terms of the A.P. $\sqrt{12}, \sqrt{27}, \sqrt{48}$ ....
26. Find the 8^{th} term of the sequence, $\sqrt{18}, \sqrt{50}, \sqrt{98}.$
27. If the 1^{st} term of an A.P. is 3 & the common difference is 5, find the sum of its 30 terms.
28.. The 3^{rd} term of an AP is A – 2B, the 5^{th} term is A + 5B, find the 1^{st} term.
29)Is the list of numbers 3, 9, 15, 21……form an A.P?

30)Find the first term and common difference of the A.P: 1, 5, 9, 13,17……

31)In the given A.P. find the missing term: $\sqrt{2}$, ….. , $5\sqrt{2}$

32)Find the 15^{th} term of an A.P: 24, 21, 18……

33)The first term of an AP is 2 and common difference is 4, then find its 31^{st}term .

34)The common difference of an A.P. is 5, then find the value of $a_9 - a_5$

35) If $a_n = 5 - 3n$ for an A.P, find the common differenceIs 68 a term of the AP: 7, 10, 13,…. ?

36) The nth term of an A.P. is 7 – 4n. Find the common difference.

-

37) Write the next term of an A.P. $\sqrt{8}, \sqrt{18}, \sqrt{32}, \ldots$

38) For what value of p, are 2p + 1, 13, 5p – 3 three consecutive terms of an A.P

39) Find the 12^{th} term of the A.P. with first term 9 and common difference 10.

40) Find the 10^{th} term of the A.P. with first term p and common difference q.

41) Find the sum of the first five prime numbers.

42) If k, 2k – 1 and 2k + 1 are three consecutive terms of an A.P., the find the value of k.

43) Find the A.P. whose nth term is given by 3 + 4n

44) Find the missing terms in A.P. 2, ___ , 26, ____

45) Find the 6^{th} term from the end of A.P. 17, 14, 11, …,…,

46) The 10^{th} term of the AP: 5, 8, 11, 14, ... is
(A) 32 (B) 35 (C) 38 (D) 185

47: In an AP if $a = -7.2$, $d = 3.6$, $a_n = 7.2$, then n is
(A) 1 (B) 3 (C) 4 (D) 5

48. In an AP, if $d = -4$, $n = 7$, $a_n = 4$, then a is
(A) 6 (B) 7 (C) 20 (D) 28

49. In an AP, if $a = 3.5$, $d = 0$, $n = 101$, then an will be
(A) 0 (B) 3.5 (C) 103.5 (D) 104.5

50. The list of numbers – 10, – 6, – 2, 2,... is
(A)an AP with $d = -16$
(B)an AP with $d = 4$
(C) an AP with $d = -4$
(D) not an AP

51. The first four terms of an AP, whose first term is –2 and the common difference is –2, are
(A) – 2, 0, 2, 4
(B) – 2, 4, – 8, 16
(C) – 2, – 4, – 6, – 8
(D) – 2, – 4, – 8, –16

52.. The 21st term of the AP whose first two terms are –3 and 4 is
(A) 17 (B) 137 (C) 143 (D) –143

53.. If the 2nd term of an AP is 13 and the 5th term is 25, what is its 7th term?
(A) 30 (B) 33 (C) 37 (D) 38

54. Which term of the AP: 21, 42, 63, 84,... is 210?
(A) 9th (B) 10th (C) 11th (D) 12^{th}

55. If the common difference of an AP is 5, then what is $a_{18} - a_{13}$?
(A) 5 (B) 20 (C) 25 (D) 30
56. What is the common difference of an AP in which $a_{18} - a_{14} = 32$?
(A) 8 (B) – 8 (C) – 4 (D) 4
57. Two APs have the same common difference. The first term of one of these is–1 and that of the other is – 8. Then the difference between their 4th terms is
(A) –1 (B) – 8 (C) 7 (D) –9
58. If 7 times the 7th term of an AP is equal to 11 times its 11th term, then its 18th term will be
(A) 7 (B) 11 (C) 18 (D) 0

59. The 4th term from the end of the AP: –11, –8, –5, ..., 49 is
(A) 37 (B) 40 (C) 43 (D) 58

60. The famous mathematician associated with finding the sum of the first 100 natural numbers is
(A) Pythagoras (B) Newton (C) Gauss (D) Euclid

CHAPTER 5:ARITHMETIC PROGRESSIONS

ANSWERS

1. p = 3

2. p = 4

3. a = $\frac{7}{5}$

4. x = 5

5. k= 3

6. d = 3

7. d = -4

8. d = 6

9. $4\sqrt{2}$

10. 239

11.Those sequence whose terms always follows certain pattern are called progression.

e.g. the sequence 3,5,7,9,…… is a progression, as each term can be found by adding

12. A list of numbers in which each term is obtained by adding a fixed number to the preceding term except the first term.

13.: we have

a_2-a_1 = 10-13=-3

a_3-a_2 = 7-10 =-3

$a_4- a_3$ = 4 -7 = -3 and so on.

Since difference of any two consecutive term is same , so given sequence is an AP.

14.: For n term of AP_

A_n = a +(n- 1) d

Where a= first term of AP

D= common difference

N= number of term

It is called general term of AP.

15.: for last term of AP

L=a+ (n-1) d

Where l= last term

A = first term , d= common difference.

16)x = 9

17)x = -3

18)x = 6

19)-22

20)-63

21)390

22)(d) 13, 15, 18, 22.....

23)20

24)a = 9

25) $\sqrt{75}, \sqrt{108}$

26) $\sqrt{578}$

27) 2265 = S_{30}

28) A – 9B = a_1

29)Yes

30)a=1,d=4

31)3 $\sqrt{2}$

32)18

33)122

34)20

35)-3

36)-4

37)$5\sqrt{2}$

38)4

39)119

40)P+9Q

41)26

42)K=3

43)7,11,15

44)14,38

45)2

46)A

47)D

48)D

49)B

50)B

51)C

52)B

53)B

54)B

55)C

56)A

57)C

58)D

59)D

60)D

CHAPTER-6

Chapter-6TRIANGLES

1. A three sided polygon is called----------.

2. The sum of all three angles of a triangle is---------.

3. Two similar triangles will be equal in area if all three sides of both triangle are ----- to their corresponding sides.

4. Two triangle having same shape but not necessarily the same size are called------ triangles.

5. Two triangles will be similar if their all corresponding angles are -------.

6. The ratio of corresponding sides of two similar triangle is always --------.

7. The ratio of areas of two similar triangles is equal to the ratio of square of their corresponding --------.

8. If two triangles have two corresponding angles equal then triangles are said to be ----- triangle.

9. In a right triangle the square of longest side is equal to the sum of square of other two sides. This theorem is known as----------.

10. In a right triangle the square of longest side is equal to the sum of square of other two sides. The longest side is called-------. .

11. If the square of longest side is equal to the sum of square of other two sides, then the angle opposite to longest side will be a--------.

Q12: Define similar figure.

Q13.:What is similar polygone?

Q14: Give two examples of pair of similar.

Q15: Write the condition for similarity of triangle.

Q16: What are equiangular triangles?

.

Q17.:Write mid point theorem of triangles.

Q18: what is angle bisector theorem.

Q19. write BPT theorem of triangles.

20.. Δ ABC ~ Δ RQP, $\angle A = 80°$, $\angle B = 40°$ find $\angle p$

21.. Find the perimeter of a square whose diagonal is $5\sqrt{2}$ cm.

22.. Δ ABC ~ Δ DEF. If area(ABC) = 2.89 m^2, area(DEF) = 2.25 m^2, AB = 1.5 m find DE.

23.. The areas of two similar triangles ABC and PQR are 64 cm^2 and 81 cm^2 respectively. If median AL = 16 cm find median PS.

24.. In a Δ ABC, if the internal bisector of ∠A meets BC in D, then

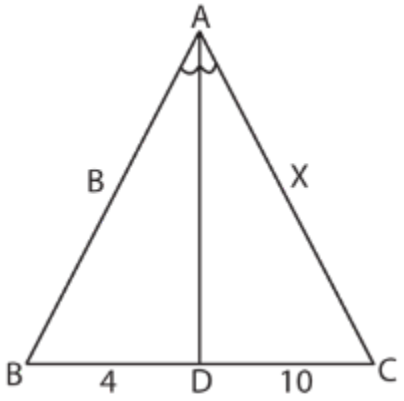
(a) $\frac{AB}{AC}=\frac{BD}{DC}$ (b) $\frac{AB}{DC}=\frac{AC}{BD}$

(c) $\frac{AB}{AC}=\frac{DC}{AD}$ (d) $\frac{AC}{AB}=\frac{BD}{BC}$

25.. If D, E, F are the mid-points of sides BC, CA and AB respectively of Δ ABC, then the ratio of the area of triangles DEF and ABC is

(a) 1 : 4 (b) 1 : 2 (c) 2 : 3 (d) 4 : 5

26.. If AD is the bisector of ∠A in the diagram, then AC =



(a) 16 (b) 20 (c) 12 (d) 18

27. In triangles ABC and DEF, ∠A = ∠E and ∠B = ∠F. Then AB : AC is

(a) DE : DF (b) DE : EF

(c) EF : ED (d) DF : EF

28. Δ ABC is a right angled triangle, where ∠B = 90° and BD ⊥ AC. If BD = 8 cm, AD = 4 cm, then CD is

(a) 24 cm (b) 16 cm (c) 32 cm (d) 8 cm

29.. The perimeters of two similar triangles ΔABC and ΔDEF are 36 cm and 24 cm respectively. If DE is 10 cm, then AB is:

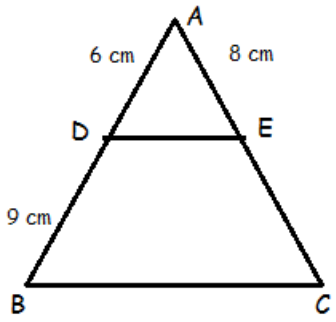
(a) 12 cm (b) 20 cm (c) 15 cm (d) 18 cm

30.. In a plane, the point equidistant from the vertices of a triangle is called its :

(a) Centroid (b) Incentre

(c) Circumcentre (d) Orthocentre

Q31. In the adjoining figure, find AC.

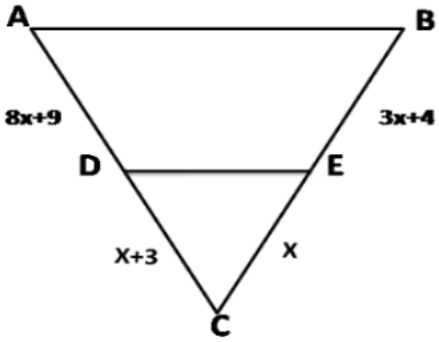


Q 32.. The lengths of the diagonals of a rhombus are 30 cm and 40 cm. find the side of a rhombus ?

Q 33. In Δ ABC ,D and E are the points on the sides AB and AC respectively, such that DE II BC. If AD=x , DB=x-2 , AE=x + 2 and EC=x-1.

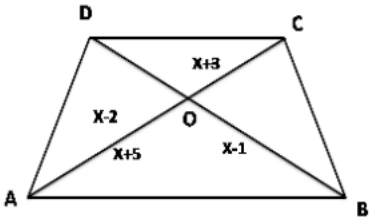
find the value of x .

Q 34. What value of x will make DE II AB in the given fig.



Q 35. In fig Δ ABD is a right triangle right angled at A and AC perpendicular to BD. Prove the AB^2= BC.BD

Q 36. In the given figure, if AB II DC, find the value of x .



Q 37. If angle P =angle RTS then show that angle PQR =angle RST .

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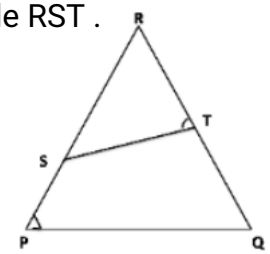

Q 38. The perimeter of two similar triangle are 25cm and 15 cm respectively. If one side of 1st triangle is 9 cm , what is the corresponding side of the other triangle .

Q 39. In the figure, DE II BC. If DE= 4cm , BC=8cm and area of ΔADE = 25 sq.cm. Find the area of ΔABC.

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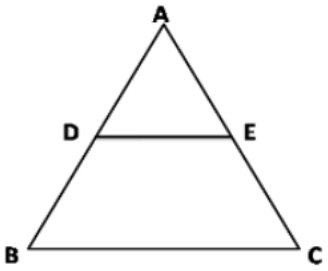
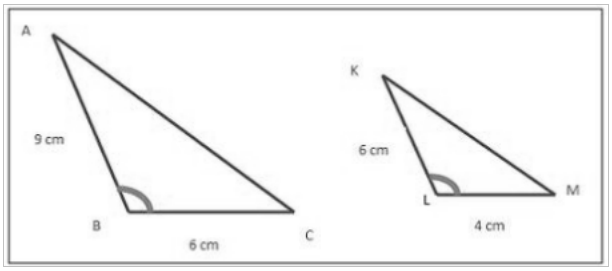


Q40. Observe the following figure. Can we conclude that the two triangles are similar? If yes, which criteria of similarity can be used?



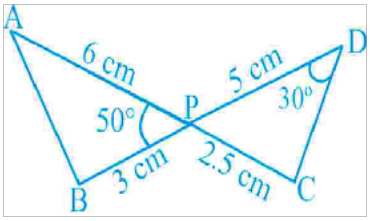
Q 41.The length of the diagonals of a rhombus are 24 cm and 32 cm. Then find

the length of the side of the rhombus.

42. If in Fig 6.1, O is the point of intersection of two chords AB and CD such that OB = OD, then triangles OAC and ODB are

(A) equilateral but not similar
(B) isosceles but not similar
(C) equilateral and similar
(D) isosceles and similar

43. In Fig.6.3, two line segments AC and BD intersect each other at the point P such that PA = 6 cm,
PB = 3cm, PC = 2.5 cm, PD = 5 cm, APB = 50° and CDP = 30°. Then, PBA is equal to

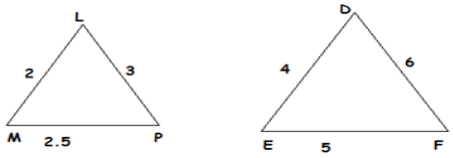


A) 50° (B) 30° (C) 60° (D) 100°

44. If in two triangles DEF and PQR, D = Q and R = E, then which of the following is not true?
(A) EF/ DF = PR/ PQ (B) DE/ EF = PQ/ RP

(C) DE/QR = DF/PQ (D) EF/RP = DE/QR

45.. Write the pairs of similar triangles in the symbolic form.



46. The corresponding altitudes of two similar triangles are 6cmand 9 cm respectively.

Find the ratio of their areas.

ANSWERS

1. Ans- Triangle.

2. Ans- 180.

3. Ans- Equal.

4.Ans- Similar triangles.

5. Ans- Equal.

6. Ans- Equal.

7. Ans- Sides.

8.Ans- Similar triangles.

9. Ans- Pythagoras theorem.

10. Ans- Hypotenuse

11. Ans- Right angle.

12.Answer: Two general figure are said to be similar figure, if they have same shape but not necessarily the same size.

13.Answer: Two polygone of same number of sides are similar, if

(1)All the corresponding angles are equal.

(2) All the corresponding sides are in same ratio or proportion.

14.Answer: Example of similar figure

1.all squared.

2.all regular hexagons

15.Answer: 1. Their corresponding angles are equal.

2.their corresponding sides are proportional.

16.Answer: if corresponding angles of two triangle are equal then they are known as equiangular triangles

17.Answer: The line segment joining the mid points of any two sides of a triangle is

parallel to the third side & is half of it.

18.Answer: The internal bisector of an angle of a triangle divides the opposite side in two segments that are proportional to other two sides of the triangle.

19.Answer: if a line drawn parallel to one side of a triangle to intersect the other two sides in distinct point, then the other two sides are divided in the same ratio.

20.Ans : $\angle P = 60°$

21.Ans : 20 cm

22.Ans : DE = 1.7 m

23.Ans : 9 cm

24 : b

25.Ans : a

26.Ans : c

27. Ans : c

28.Ans : C

29.Ans : b

30. Ans : a

31.4

32.Ans : 25 cm

33.Ans : x=4

34.Ans : x=2

35.Ans : Show ΔDAB and ΔACB similar , then use B.P.T

36. Ans : X=7

37.Ans :Show ΔRPQ and ΔRTS Similar

38.Ans :5.4 cm

Q.39Ans : 100 Sq.cm

Q40.Ans : Yes, SAS criteria

Q41. (Ans: 20 cm)

42. Solution : Answer (D)

43.Solution : Answer (D)

44.Solution : Answer (B)

45. (Ans .ΔLMP ~ ΔDEF.)

46. Ans : 4:9

CHAPTER -7 COORDINATE GEOMETRY

Q 1. The distance from y-axis is called-----.

Q 2. The distance from x-axis is called-------.

Q 3. The coordinate of origin is given by------.

Q 4. On x-axis coordinate of y-axis is--------.

Q 5. On y-axis coordinate of x-axis is--------.

Q 6. What is distance formula?

Q 7. The distance of a point from origin is------.

Q 8. What is section formula to find coordinate of (x,y)-

Q 9. What is formula to find area of a triangle in coordinates are given-

Q 10:What is condition of collinearity of three points P, Q, R?

Q 11. Centroid of the triangle with vertices A(3, −7), B(5, 1) and C(−1, −5) is

(a) $\left(\frac{7}{3}, -\frac{11}{3}\right)$ (b) $\left(-\frac{7}{3}, \frac{11}{3}\right)$

(c) $\left(\frac{11}{3}, -\frac{7}{3}\right)$ (d) $\left(-\frac{11}{3}, \frac{7}{3}\right)$

Q 12. Area of a triangle ABC, whose vertices are A(6, 7), B(2, −9), C(−4, 1) is
(a) 48 sq. units (b) 68 sq. units
(c) 28 sq. units (d) 38 sq. units

Q 13. Area of the triangle formed by the points (0, 0), (2, 0) and (0, 2) is:
(a) 1 Sq. unit (b) 2 Sq. unit
(c) 4 Sq. unit (d) 8 Sq. unit

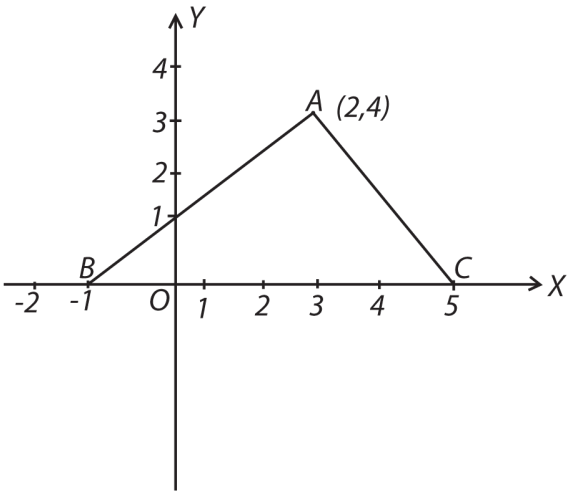
Q 14. The centroid of the triangle whose vertices are (0, 0), (6, 0) and (0, 8) is
(a) (2, 8/3) (b) (3, 4)
(c) (4, 3) (d) (6, 8)

Q 15. A point on the x-axis is
(a) (3, 7) (b) (5, 0) (c) (0, 10) (d) (0, −3)

Q 16. The points which satisfy the inequaiton $3x + y > 6$ is
(a) (2, 1) (b) (−1, 0)
(c) (1, 3) (d) (−2, 1)

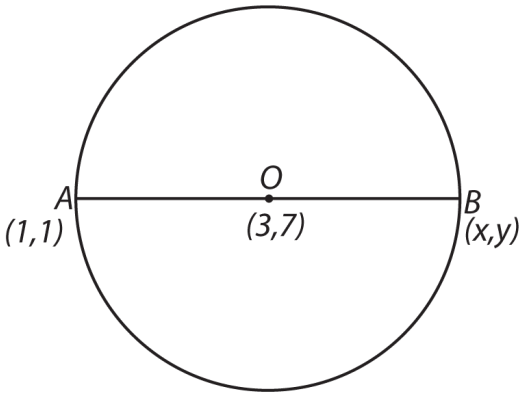
Q 17. If $x^2 - 5x + 4 < 0$, then x lies between
(a) 1 and 4 (b) 1 and 5
(c) 2 and 3 (d) 2 and 5

Q 18. In the figure, find the area of Δ ABC.



Q 19. Find the distance of the point (−3, 4) from the origin.

Q 20. In the given figure, AB is diameter of the circle with centre O(3, 7). If A(1, 1) find B.



Q 21. If the midpoint of the line segment joining the points p(5, b − 3) and Q(−3, 4) is (4, 2) find the value of b.

Q 22]. Find the centroid of the triangle XYZ whose vertices are X (3, - 5) Y (- 3, 4) and Z (9, - 2).

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

Q 23]. The area of the triangle ABC with coordinates as A (1, 2) B (2, 5) and C (- 2, - 5)

a) -1

b) .4
c) 2
d) 1

Q 24.Find the value of p for which these point are collinear (7,-2) , (5,1) ,(3,p)?
a) 2
b) 4
c) 3
d) None of these
Q]25. If the mid-point of the line segment joining the points A (3, 4) and B (a, 4) is P (x, y) and x + y – 20 = 0,then find the value of a
a) 0
b) 1
c) 40
d) 45

Q 26. Write the perimeter of the triangle formed by the points O9(0,0), A(a,0) and B(0,b).

Q 27. What is the area of the triangle formed by the points O(0,0), A(6,0) and B(0,4) ?

Q 28 Find the distance between the points ($a\cos 35^0$,0) & (0 ,$a\cos 55^0$).

Q 29. Find the relation between x and y such that the point (x,y) is equidistant from the point (7,1)and (3,5).
Q 30 .Find the point on y- axis which is equidistant from (5,-2)and (-3,2).
Q 31 What point on the x axis is equidistant from (7,6)and (-3,4)?
Q 32 If the points A (4,3)and B(x,5) are on the circle with the centre O(2,3) ,find the value of x.
Q 33. If the mid-point of line segment joining the point P (6,b-2) and Q(-2,4) is (2,-3). Find the value of b.
Q 34 If A (1,2) , B (4,3) and C(6,6) are the three vertices of parallelogram ABCD , find the coordinates of 4^{th} vertex D.
Q 35 The two vertices of an equilateral triangle are (0,0), ($3,\sqrt{3}$), find the area of the triangle.
Q 36 Two vertices of a triangle are (3,-5) and (-7,4). If the centroid is (2,-1) , find the third vertex.
Q 37 If P (1,2), Q(4,6) , R(5,7) & S(a,b) are the vertices of parallelogram PQRS find the value a and b.
Q 38: Thre distance between A(0,3) and B(x,7) is 5 . Find the value of x.
Q 39: Find the distance of the point A(-3,4) from the x-axis.
Q 40 Find the coordinate of mid- point R of line segment PQ, if the point P is (3, 4) and the point Q is (1, 2).
Q 41 Find the distance of the point (4,3) from the origin.

Q 42 Find a point on y axis which is equidistant from the points (3, 4) and (6, 7).
Q 43 Find a point on the x-axis which is equidistant from the points A (5,4) and B(-2,3)

Q 44Find the mid-point of a line segment joining the points (--3, 8) and (7, 4)

Q 45 Find the radius of the circle whose end points of diameter are (--4, 1) and (2, --3)

Q 46 The perpendicular distance of A(5, 12) from Y axis is _____

Q 47 If the points A(2,3), B(5,k) and C(6, 7) are collinear, then the value of k is _____

Q 48 The three consecutive vertices of a parallelogram taken in order are (6,8), (3, 7) and (--2,--2).

Find the fourth vertex of the parallelogram.

Q 49 The distance of the point (--5,12) from the origin is _____

Q 50.If (2, p) is the midpoint of the line segment joining the points A(6, -5) and B(-2, 11), find the value of p.

Q 51 .If A)1, 20, b(4, 3) and C(6, 6) are three vertices of a parallelogram ABCD, find the co-ordinates of the fourth vertex D.

Q 52.What is the distance between the points A(c, 0) and B(0, -c) ?

Q 53. The points A (9, 0), B (9, 6), C (–9, 6) and D (–9, 0) are thevertices of a
(A) square (B) rectangle (C) rhombus (D) trapezium

Q 54. The distance of the point P (2, 3) from the *x*-axis is
(A) 2 (B) 3 (C) 1 (D) 5

Q 55 The distance between the points A (0, 6) and B (0, –2) is
(A) 6 (B) 8 (C) 4 (D) 2

Q 56.The abscissa of the point (5,-8) is ____.

Q 57. the ordinate of the point (3,0) is _____.

Q 58.The centroid of the triangle divides each median in the ratio_____.

Q 59. the distance of the point p(a,b)from the origin is _____.

Chapter -7 coordinate geometry

Answers

Ans 1:- Abscissa.

Ans 2:- Ordinate.

Ans 3: - (0,0)

Ans4 :- 0.

Ans 5:- 0.

Ans 6:- $\sqrt{(x2-x1)2} + (y2-y1)2$

Ans 7:- $\sqrt{x2+y2}$

Ans 8:- $x= \frac{m1x2+m2x1}{m1+m2}$, $y= \frac{m1y2+m2y1}{m1+m2}$

Ans 9: - $\frac{1}{2}[x1(y2-y3)+x2(y3-y1)+x3(y1-y2)]$

Answer 10: Three points are said to be collinear if area of the triangle formed by these point is zero.

If P(), Q(), R() be three points. Then P,Q, &R will be collinear if-

Area of triangle PQR =0

Or $X_1 (y_2 - y_3) + X_2 (y_3 - y_1) + X_3 (y_1 - y_2) = 0$

Ans 11 : a $\frac{7}{3}, \frac{-11}{3}$

Ans 12: (b) 68 sq. Units

Ans 13: b 2 sq. Units

Ans 14:a 2, $\frac{8}{3}$

Ans 15: b 5, 0

Ans 16: a 2, 1

Ans 17: a 1 and 4

Ans 18: 12 sq. units

Ans 19 : 5 units

Ans 20: b 5, 13

Ans 21: b = 3

Solution 22: (d)

Centroid of the triangle is given by

$x=x1+x2+x3/3=3-3+9/3=3$

$y=y1+y2+y/3//3=-5+4-2/3=-1$

Solution 23: (d)

$A=1/2[1(5+5)+2(-5-2)-2(2-5)]=1$

Solution 24: a

For these points to be collinear

A=0

Or

$12[7(1-p)+5(p+2)+3(-2-1)]=0$

$7-7p+5p+10-9=0$

P=2

Solution 25: (d)

Mid point (3+a)/2, 4

Now

(3+a)/2 -4 -20=0

3+a=48

A=45

Ans 26:1) 1/2ab

Ans 27: 12 sq. unit

Ans 28: a units

Ans 29 : x - y = 2

Ans 30: -2

Ans 31: (3,0)

Ans 32: X= 2

Ans 33: b = -8

Ans 34: (3,5)

Ans 35: $3\sqrt{3}$ sq. unit

Ans 36: X = 10 , y = -2

Ans 37: a=2 and b=3

ANS 38: x= +3,-3.

ANS 39: the distance of the point from the x-axis = 4 units .

ANS 40 : (2, 3)

(Ans 41: 5)

Ans 42: (0,10)

Ans 43: (2,0)

Ans 44 :(2, 6)

Ans 45: (√13 units)

Ans 46:(12 units)

Ans 47: (11/4)

Ans 48: ((1, --1))

Ans 49: (13 units)

Ans 50: p = 3

Ans 51: D(3, 5)

Ans 52: $\sqrt{2}$c units

Solution 53: Answer (B)
Solution 54: Answer (B)
Solution 55: Answer (B)

Ans 56:– 5

Ans 57:– 0

Ans 58: -2:1

Ans 59:–$\sqrt{a^2+b^2}$

CHAPTER 8: TRIGNOMETRY

1. The value of (sin30° + cos30°) – (sin60° + cos60°) is
(A) – 1 (B) 0 (C) 1 (D) 2

2.The value of tan 30 / cot 60 is
(A) 1/ √2 (B) 1/√3 (C) √3 (D) 1

3.The value of (sin 45° + cos 45°) is
(A) 1/√2 (B) √2 (C) √3/2 (D) 1

4. If cos A = 4/5 , then the value of tan A is
(A) 3/5 (B) 3/4 (C) 4/3 (D) 5/3

5. If sin A =½ , then the value of cot A is
(A) √3 (B) 1/ √3 (C) √3 /2 (D) 1

6. The value of the expression [cosec (75° +θ) − sec (15° − θ) − tan (55° +θ) +cot (35° −θ)] is (A) − 1 (B) 0 (C) 1
(D) 3/2

7. The value of (tan1° tan2° tan3° ... tan89°) is
(A) 0 (B) 1 (C) 2 (D) 1/ 2

8. If ΔABC is right angled at C, then the value of cos (A+B) is
(A) 0 (B) 1 (C)1 / 2 (D) √3 / 2

9 Evaluate: sin θ. sec (90-θ)

10.Find the value of $(\text{cosec}^2\theta - 1).\tan^2\theta$

11. If sin θ = x and sec θ = y then find the value of cot θ.

12. If cos θ= $\frac{5}{3}$, then what is the value of cos θ + tan θ. Find the value of

tan (65°- θ) - cot (25°+ θ).

13. Find the value of sin 38° - cos 52°

14. Find the value of cosθ+ sec θ, when it is given that cos θ = $\frac{1}{2}$

15. Evaluate $3\cot^2 60° + \sec^2 45°$.

16. If 3x = csc θ and $\frac{3}{x}$= cot θ, find value of $3(x^2 - \frac{1}{x^2})$.

17.. If 2x = sec A and $\frac{2}{x}$ = tan A then find the value of $2(x^2 - \frac{1}{x^2})$.

18. Find the value of $\sin 38^\circ - \cos 52^\circ$

19. If $\sec 2A = \text{cosec}(A - 36^\circ)$, then find the value of A

20. (Find the value of $\tan(65^\circ - \theta) - \cot(25^\circ + \theta)$

21. If $\text{cosec}\,\theta + \cot\theta = x$, then $\text{cosec}\,\theta - \cot\theta$ is equal to _____

22. If $\sec\theta + \tan\theta = x$, then $\sec\theta - \tan\theta$ is equal to _____

23. If $\sin\theta = \cos\theta$, then the value of θ is _____

24. Evaluate $\cos\theta\ \text{cosec}(90^\circ - \theta)$

25. Find the value of $4\cos 50^\circ \text{cosec}\, 40^\circ$

26. The value of $\sin^2 30^\circ - \cos^2 30^\circ$ is _____

27. If $\tan\theta + \cot\theta = 2$, then find $\tan^2\theta + \cot^2\theta$

28. In triangle ABC, $\angle C = 90^\circ$, then find the value of $1 + \tan^2 A$

29. If $\sin 3A = \cos(A - 26^\circ)$, then the value of A, where A is an acute angle, is _____

30. If $\sin x + \text{cosec}\, x = 2$, then $\sin^2 x + \text{cosec}^2 x$ is equal to _____

31. If $(1 + \cos A)(1 - \cos A) = \frac{3}{4}$,

32. find the value of sec A

33. If $\tan\theta = \frac{1}{\sqrt{3}}$, then evaluate, $\left[\frac{\text{cosec}^2\theta - \sec^2\theta}{\text{cosec}^2\theta + \sec^2\theta}\right]$

34. If $\sin\theta = \cos\theta$, find the value of θ.

35. . If $\tan\theta = \cot(30^0 + \theta)$, find the value of θ.

36. . If $\sin 3\theta = \cos(\theta - 6^0)$ and 3θ and $\theta - 6^0$ are acute angles, find the value of θ.

37. . If $\tan\theta = \frac{4}{3}$, what is the value of $\left[\frac{\sin\theta + \cos\theta}{\sin\theta - \cos\theta}\right]$

38. If $\cot\theta = \frac{7}{8}$, evaluate $\frac{(1+\sin\theta)(1-\sin\theta)}{1+\cos\theta\ \ )(1-\cos\theta)}$.

39. If $\tan A = \frac{5}{12}$, find the value of $(\sin A + \cos A).\sec A$.

40. . If $\cos A = \frac{7}{25}$, find the value of $\tan A + \cot A$.

41. If $\sin\theta = \frac{1}{3}$, then find the value of $(2\cot^2\theta + 2)$

42. . If $\sec^2\theta(1+\sin\theta)(1-\sin\theta) = k$, then find the value of k.

43. . If sec A=$\frac{15}{7}$ and A + B=90^0, find the value of cosec B.

44. . If 3x=cosecθ and $\frac{3}{x}$=cotθ, find the value of 3(x^2 - $\frac{1}{x^2}$).

45. . Evaluate: $\frac{1}{\sqrt{3}}$ sec60^0+ cosec60^0.

46. . Find the value of 4cosec$^2 60^0$-16tan$^2 30^0$.

47. . In ΔABC, ∠C=90^0, ∠A=$45^0$and AB=10cm Find BC using trigonometric ratios.

48. . In ΔABC, write cos($\frac{B+c}{2}$) in terms of angle A.

49. . If 3cotA=4, find the value of sin A.

50. Express sin67^0+cos75^0 in terms of trigonometric ratios of angles between 0^0 and 45^0.

51. . Write the acute angle θ satisfying $\sqrt{3}$sinθ=cosθ.

52. . If A+B=$90^0$and tan A=$\frac{3}{4}$, what is cot B?

1. B
2. D
3. B
4. B
5. B
6. B
7. B
8. A
9. 1
10. 1
11. 1/xy
12. 31/20
13. 0
14. 5/2
15. 3
16. 1/3
17. ½
18. 0
19. 45°
20. 0
21. 1/x

22. 1/x
23. 45°
24. 1
25. 4
26. ½
27. 5/3
28. 0
29. cosec^2 B
30. 0
31. 2
32. 2
33. 2/4=1/2
34. 45°
35. 30°
36. 24°
37. -7
38. 49/64
39. 17/12
40. 627/168
41. 20
42. K=1
43. 15/7
44. 1/3
45. $4/\sqrt{3}$
46. 0
47. $5\sqrt{2}$
48. sin A/2
49. 3/5
50. Cos23°+sin25°
51. 30°
52. 3/4