MATHEMATICS

Result Oriented

(NDA & JEE MAINS)

- 1. Find the zeroes of t^2 25 = 0, also verify the relationship b/w ze'note and coeff.
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- 10. If α , β are zeroes of $2x^2+5x+1$ then find the value of $\alpha+\beta+\alpha\beta$.
- 11. If α , β are zeroes of $2n^2$ -5n+3 find $\alpha/\beta + \beta/\alpha$. ii) $1/\alpha + 1/\beta$
- 12. If $P(x) = 6x^2 + x 2$, α , β are zeroes of it find the value of i) $\alpha^2 \beta + \beta^2 \alpha$ ii) $\alpha^3 + \beta^3$.
- 13. If 1 is a zero of ax^2+bx+C ($a\neq 0$) then find the value of $\frac{b+c}{a}$.

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CHAPTER - 3

- 1. Find the sum of intercept cut off by the line 3x+2y = 5 on co-ordinate axis.
- 2. For what value of K, (b,k) is a solution of 3x+y=22.
- 3. If x=4 and y=3P-1 is a solution of x+y=8 and x-y=2. Find p.
- 4. Find the Point of intersection of y = 2 and 2x+3y = 5.
- 5. Find the value of x y in which 2x+2y = 9, x-2y = 1.
- 6. If 2x + 3y = 0 and 4x 3y = 0. Find x+y.
- 7. Solve for x & y: $\sqrt{5}$ x + $\sqrt{7}$ y=0, $\sqrt{3}$ x- $\sqrt{2}$ y=0
- 8. If $\sqrt{a} \times \sqrt{b} y = 0$ and $\sqrt{b} \times \sqrt{a} y = 0$. Find xy.
- 9. If 2x = 8y-1 and 9y = 3x-b. Find x-y.
- 10. Solve for x and y: 31x + 29y = 89, 29x + 31y = 91.
- 11. Find the value of x + y, 152x 378y = -78, -378x + 152y = -604.
- 12. Find area of a triangle whose vertices are (3,2), (5,2) and (-7,2).
- 13. Find k for which equation has no solution, kx + 2y 1 = 0 and 5x 3y + 2 = 0
- 14. Find k for which equation has infinite sol. 2x 3y = 7, (k+2) x (2k+1) y = 3(2k-1).
- 15. Find m, If 2x + 3y 5 = 0 and mx 6y = 8 has unique solution.

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CHAPTER 3

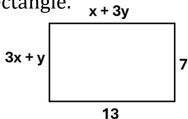
- 1. Solve the following $\sqrt{5x} + \sqrt{7y} = 0$, $\sqrt{3x} \sqrt{2y} = 0$.
- 2. Find x & y If $\sqrt{x} + \sqrt{y} = 7$ and $\sqrt{x} \sqrt{y} = 1$.
- 3. Solve 31x + 29y = 89 and 29x + 31y = 91.
- 4. Find area of Δ formed by x+y=6 and co-ordinate axes.
- 5. Find the value of K for which given Equation has no solution kx + 2y 1 = 0 and 5x 3y + 2 = 0
- 6. In a cyclic \square ABCD, \angle A = 6x + 10, \angle B = 5x, \angle C = x+y, \angle D = 3y-10. Find x+y.
- 7. The larger of two supplementary angle exceeds the smaller by 18° find the angle.
- 8. The sum of digits of a two digit No is 9. If 27 is added to it. Then digits of the number get reversed. Find the number.
- 9. The sum of two number is 20 and their product is 75. Find the sum of their reciprocals.
- 10. Two number are in the ratio 3:4. If 8 is added to each of number the ratio become 4:5. Find the sum of numbers.

 4x + $\frac{6}{y}$
- 11. In the given rectangle find x & y.



13

12. Find the x & y in given rectangle.



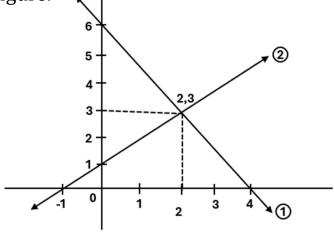
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CHAPTER - 3

1. Find the ratio of area of triangle formed by given lines with x-axis and y-axis in the given figure.



- 2. Draw the graph of x y + 2 = 0 and 4x y 4 = 0, also find area on x-axis.
- 3. The monthly income of A and B are in the ratio 9:7 and their monthly expenditure are in the ratio 4:3. If each of them saves 1600 Rs per month. Find their monthly income.
- 4. 37 markers and 53 Pens together cost 3200, while 53 marker and 37 pens cost 4000 Rs. Find the cost of each marker and Pen.
- 5. A father is three times old as his son. After 12 years, he will be twice as old as his son, find the age of father and son.
- 6. If 2 is added to the numerator of a fraction, it becomes 1/2 and if 1 is subtracted from the denominator it becomes 1/3 find fraction.
- 7. If one number is twice the other and their sum is 117, then find larger number.
- 8. Megha has only 1 rupee and 2 rupee coin. If total number of coins is 50. and amount with her 755 find number of each coin.

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QUADRATIC EQUATION

1. Find k. If $3x^2 + kx - 2 = 0$ have equal roots.

- 2. find x If x + 1/x = 2
- 3. find x If (x + 2)(x 2) = 8

4. If sum of two No is 8 and their product is 16.

5. If a Company makes certain Items in a day and each cost is 3 more than 2twice the Number of articles. If total cost is 90. find number of items.

6. If a train cover 360 km with a certain-speed. It takes 3 hour more if speed were 8 km/h less, find speed of train.

7. Factorise

1.
$$\frac{x+2}{x+1} = \frac{x}{3}$$

$$2x^2 + 2\sqrt{3}x - 6 = 0$$

8. Factorise $2x^2 - x + 1/8 = 0$

9. Find k If roots are equal $kx(kx - 2\sqrt{5}) + 10 = 0$

10. If $(1+m^2) x^2 - 2mcx + (c^2 - a^2) = 0$ has equal root the prove that $c^2 = a^2(1 + m^2)$.

11. (b-c) $x^2 + (c-a)x + (a-b) = 0$ are equal roots. Then prove that 2b = a + c.

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CHAPTER - 4

- 1. Find the discriminant of the equation $3\sqrt{3}x^2 + 10x + \sqrt{3} = 0$
- 2. If the sum of roots of equation $x^2-(k+6)n+2(2k-3)=0$ is equal to the half of their product, then find k.
- 3. Find the value of x, $x + \frac{1}{x} = 11\frac{1}{11}$
- 4. Find k for which kx(x-3) + 9 = 0 has equal roots.
- 5. Find k for which roots of equation $3x^2 10x + k = 0$ are reciprocal of each other.
- 6. The roots of equation $kx^2 + 6x + 4k = 0$ are equal find k.
- 7. The root of equation $x^2 12x + p = 0$ are in ratio 1 : 2, find p.
- 8. If x = 1 is a common root of equation $ax^2 + ax + 3 = 0$ and $x^2 + x + 6 = 0$ then find ab.
- 9. If sum of roots of equation $x^2 x = \lambda(2n-1)$ is zero, find λ .
- 10. If α and β are roots of $2x^2 + x 6 = 0$, then find a Quadratic equation whose roots are 3α and 3β .
- 11. Find $x\sqrt{13 x^2} = x + 5$
- 12. If roots of equation $2x^2 + (4m + 1)x + 2(2m 1) = 0$ are reciprocal of each other, find m.
- 13. If α , β are roots of $x^2 4x + k = 0$ and $\alpha^2 + \beta^2 = 40$ then find k.
- 14. Find the value of x in $x^2 2ax + a^2 b^2 = 0$
- 15. If α , β are roots of $x^2 4x + 3 = 0$ then find the value of $\alpha^4 \beta^2 + \alpha^2 \beta^4$

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