MATHS

BOOKS - NAVNEET PUBLICATION

QUADRATIC EQUATION
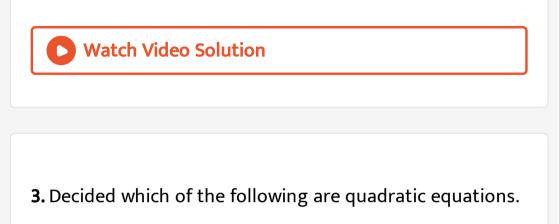
Solved

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1. Write any two quadratic equations.

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2. Decided which of the following are quadratic equations.

(i)$x^2 + 5x - 2 = 0$.

3. Decided which of the following are quadratic equations.

(ii) $y^2 = 5y - 10$

4. Decided which of the following are quadratic equations.

(iii) $y^2 + \dfrac{1}{2} = 2$.

5. Decided which of the following are quadratic equations.

(iv) $x + \dfrac{1}{x} = -2.$

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6. Decided which of the following are quadratic equations.

(v) $(m + 2)(m - 5) = 0.$

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7. Decided which of the following are quadratic equations.

(vi) $m^3 + 3m^2 - 2 = 3m^3.$

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8. Write the following quadratic equations in the form $ax^2 + bx + c = 0$. Write the values of a, b, c for each equation.

$$2y = 10 - y^2$$

9. Write the following quadratic equations in the form $ax^2 + bx + c = 0$. Write the values of a, b, c for each equation.

$$(x - 1)^2 = 2x + 3$$

10. Write the following quadratic equations in the form $ax^2 + bx + c = 0$. Write the values of a, b, c for each equation.

$$x^2 + 5x = -(3 - x)$$

11. Write the following quadratic equations in the form $ax^2 + bx + c = 0$. Write the values of a, b, c for each equation.

$$3m^2 = 2m^2 - 9$$

12. Write the following quadratic equations in the form $ax^2 + bx + c = 0$. Write the values of a, b, c for each equation.

$$p(3 + 6p) = -5$$

13. Write the following quadratic equations in the form $ax^2 + bx + c = 0$. Write the values of a, b, c for each equation.

$$x^2 - 9 = 13.$$

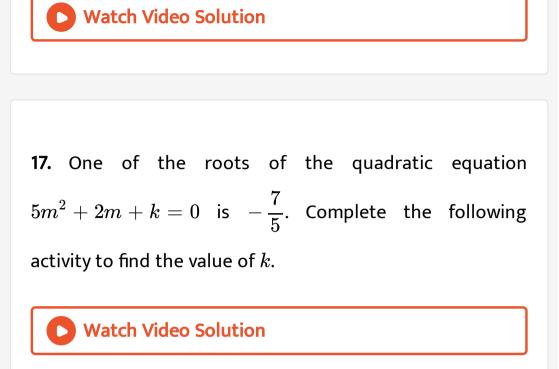**14.** Determine wheter the value given against each of the quadratic equation are the roots of the equation.

(i) $x^2 + 4x - 5 = 0, x = 1, -1$

15. Determine whether the value given against each of the quadratic equation are the roots of the equation.
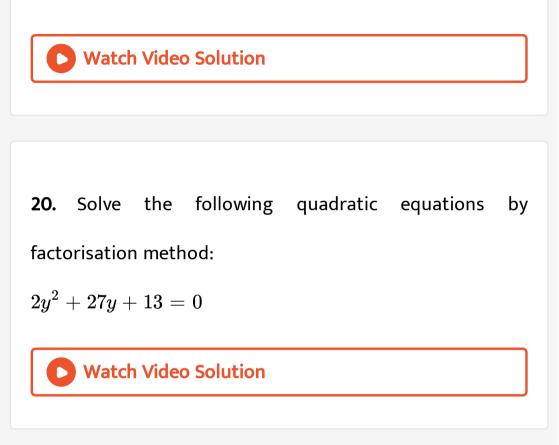
(ii) $2m^2 - 5m = 0, m = 2, \dfrac{5}{2}$.

16. If $x = 3$ is one root of the equation $kx^2 - 10x + 3 = 0$, find the value of k.

17. One of the roots of the quadratic equation $5m^2 + 2m + k = 0$ is $-\dfrac{7}{5}$. Complete the following activity to find the value of k.

18. Solve the following quadratic equations by factorisation method:

$x^2 - 15x + 54 = 0$

19. Solve the following quadratic equation by factorisation.

(ii)$x^2 + x - 20 = 0$

20. Solve the following quadratic equations by factorisation method:

$2y^2 + 27y + 13 = 0$

21. Solve the following quadratic equation by factorisation.

(iv) $5m^2 = 22m + 15.$

22. Solve the following quadratic equation by factorisation.
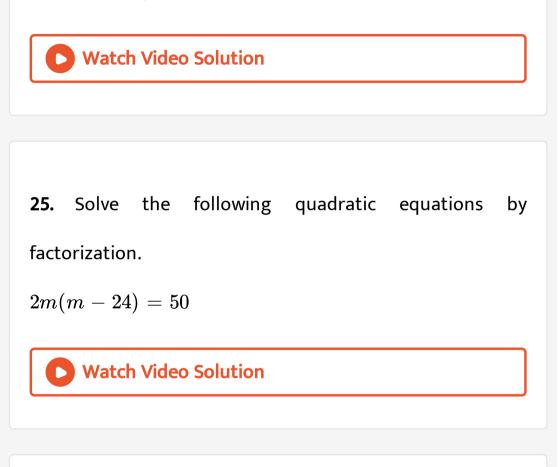
(v) $2x^2 - 2x + \dfrac{1}{2} = 0.$

23. Solve the following quadratic equations by factorisation method:

$comp \leq tethe\, follow \in gactivity \rightarrow solvethe\ raticequation$

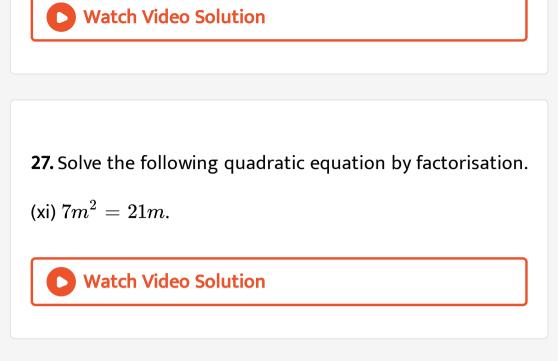sqart2x^2+7x+5sqrt2=0` by factorisation method:

24. Solve the following quadratic equation by factorisation.

(viii) $3x^2 - 2\sqrt{6}x + 2 = 0$.

25. Solve the following quadratic equations by factorization.

$2m(m - 24) = 50$

26. Solve the following quadratic equations by factorisation method:

$25m^2 = 9$

27. Solve the following quadratic equation by factorisation.

(xi) $7m^2 = 21m$.

28. Solve the following quadratic equation by factorisation.

(xii) $m^2 - 11 = 0$.

29. Solve the following quadratic equation by completing the square method: $x^2 + x - 20 = 0$

30. Solve the following quadratic equation by completing the square method: $x^2 + 2x - 5 = 0$

31. Solve the following quadratic equation by completing the square method: $m^2 - 5m = -3$

32. Solve the following quadratic equation by completing the square method: $9y^2 - 12y + 2 = 0$

33. Solve the following quadratic equation by completing the square method: $2y^2 + 9y + 10 = 0$

34. Solve the following quadratic equation by completing the square method: $5x^2 = 4x + 7$

35. Solve the equation $2x^2 + 13x + 15 = 0$ by factorization method.

36. Solve the equation $2x^2 + 13x + 15 = 0$ by factorization method.

37. Compare the given quadratic equation t the general form and write value of a,b,c

(i) $x^2 - 7x + 5 = 0$

38. Find the values of a,b,c for the following quadratic equations by comparing with standard (general)form:

$2m^2 = 5m - 5$ and $y^2 = 7y$.

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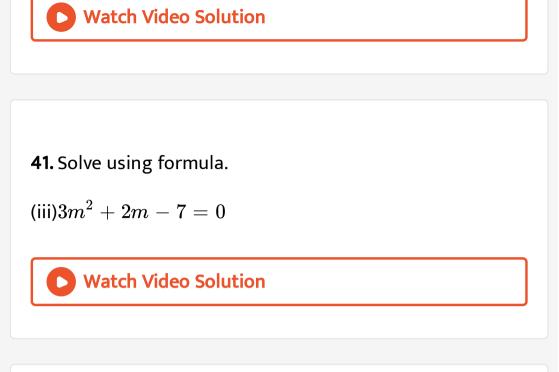
39. Solve the following quadratic equations using formula method:

$x^2 + 6x + 5 = 0$

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40. Solve using formula.

(ii) $x^2 - 3x - 2 = 0$

41. Solve using formula.

(iii)$3m^2 + 2m - 7 = 0$

42. Solve using formula.

(iv)$5m^2 - 4m - 2 = 0$

43. Solve using formula.

(v)$y^2 + \dfrac{1}{3}y = 2$

44. Solve the following quadratic equations using formula method:

$$5x^2 + 13x + 8 = 0$$

45. Find the value of discriminant of the following quadratic equations.

(i) $x^2 + 10x - 7 = 0$.

46. Find the values of the discriminant for the following quadratic equations:

$$2y^2 - 5y + 10 = 0$$

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47. Find the values of the discriminant for the following quadratic equations:

$$\sqrt{2}y^2 - 5y + 10 = 0$$

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48. Determine the nature of the roots of the following quadratic equations from their discriminants:

$$x^2 - 4x + 4 = 0$$

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49. Determine the nature of roots of the following quadratic equation: $2y^2 - 7y + 2 = 0$

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50. Determine the nature of roots of the following quadratic equation: $m^2 + 2m + 9 = 0$

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51. From the quadratic equation , if the roots are:

0 and $4.$

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52. Write the quadratic equation if the roots are 3 and -10.

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53. Write the quadratic equation if the roots are:

$\dfrac{1}{2}$ and $-\dfrac{1}{2}$

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54. Form the quadratic equation from the roots given below.

(iv)$2 - \sqrt{5}, 2 + \sqrt{5}$

55. Sum of the roots of a quadratic equation is double their product.

Find k if equation is $x^2 - 4kx + k + 3 = 0$.

56. If α and β are the roots of the quadratic equation

$y^2 - 2y - 7 = 0,$ find the values of

$$\alpha^2 + \beta^2$$

57. If alpha and beta are the roots of the quadratic equation

$$y^2 - 2y - 7 = 0, f \in dthevaluesof \text{ alpha\^2+ beta\^2`}$$

58. The roots of the following quadratic equation are real and equal. Find k. $3y^2 + ky + 12 = 0$

59. The roots of the following quadratic equation are real and equal. Find k. $kx(x - 2) + 6 = 0$

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60. Product of Pragati's age 2 years ago and 3 years hence is 84.

Find her present age.

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61. The sum of squares of two consecutive even natural numbers is 244. Find the numbers.

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62. Vivek is older than Kishor by 5 years. The sum of the reciprocals of their ages is $\dfrac{1}{6}$. Find their present ages.

63. Suyash scored 10 marks more in second test than that in first.

5 times the score of the second test is same as square of the score

in first test. Find his score in first test.

64. Mr. Kasam runs a small business of making earthen pots.

He makes certain number of pots on daily basis. Production cost of each pot is Rs. 40 more than 10 times total number of pots,

he makes in one day. If production cost of all pots per day is Rs. 600, find production cost of one pot and number of pots he makes

per day.

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65. Pratik travels by boat 36 km down a river and back in 8 hours. If the speed of his boat in still water is 12km/hr, find

the speed of the river current.

66. Pintu takes 6 days more than Nishu to complete certain work. If they work together, they finish it in 4 days. How many days would it take to complete the work if they work alone?

67. If 460 is divided by a natural number, quotient is 6 more than 5 times the divisor and remainder is 1. Find quotient and divisor.

68. Choose the correct alternative answers for the following subquestions:

Which of the following is a quadratic equation?

A. $\dfrac{5}{x - 3} = x^2$

B. $x(x + 5) = 2$

C. $n - 1 = 2n$

D. $\dfrac{1}{x^2}(x + 2) = x$

Answer:

69. Choose the correct alternative answers for the following subquestions:

Which of the following is not a quadratic equation?

A. $x^2 + 4x = 11 + x^2$

B. $x^2 = 4x$

C. $5x^2 = 90$

D. $2x - x^2 = x^2 + 5$

Answer:

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70. Choose the correct answer for the following questions.

(iii) The roots of $x^2 + kx + k = 0$ are real and equal, find k.

A. 0

B. 4

C. 0 or 4

D. 2

Answer:

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71. Choose the correct answer for the following questions.

(iv) For $\sqrt{2}x^2 - 5x + \sqrt{2} = 0$, find the value of the discriminant.

A. -5

B. 17

C. sqrt2

D. 2aqrt2-5

Answer:

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72. Choose the correct alternative answers for the following subquestions:

Which of the following equations has roots 3,5 ?

    A. x^2-15x+8=0

    B. x^2-5x+3=0

    C. x^2+3x-5=0

    D. x^2+8x-15=0

Answer:

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73. Choose the correct alternative answers for the following subquestions:

Which of following equations has the sum of the root -5?

    A. $3x^2-15x+3=0$

    B. $x^2-5x+3=0$

    C. $x^2+3x-5=0$

    D. $3x^2+15x+3=0$

Answer:

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74. Choose the correct alternative answers for the following subquestions:

$\sqrt{5}m^2 - \sqrt{5}m + \sqrt{5} = 0$, which of the following statements is true for this given equation?

    A. The roots are real and unequal

    B. The roots are real and equal

    C. The roots are not real

    D. three roots.

Answer:

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75. Choose the correct answer for the following questions.

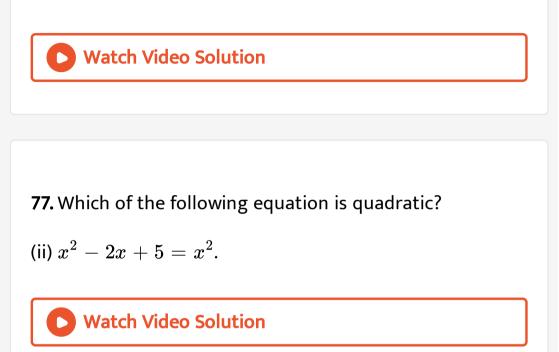(viii) One of the roots of equation $x^2 + mx - 5 = 0$ is 2, find m.

A. -2

B. -0.5

C.

D. 2

Answer:

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76. Which of the following equation is quadratic?

(i) $x^2 + 2x + 11 = 0.$

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77. Which of the following equation is quadratic?

(ii) $x^2 - 2x + 5 = x^2.$

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78. Which of the following equation is quadratic?

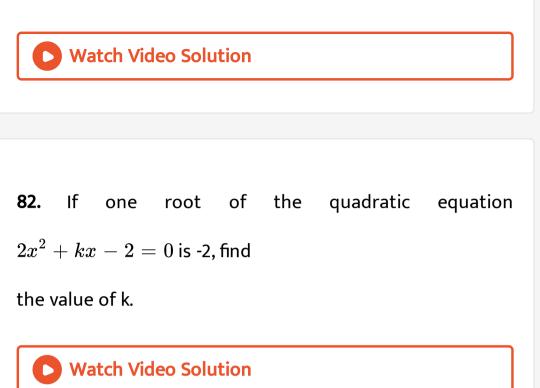(iii) $(x + 2)^2 = 2x^2$

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79. Find the value of discriminat for each of the following equations.

(i) $2y^2 - y + 2 = 0.$

80. Find the value of discriminat for each of the following equations.

(ii) $5m^2 - m = 0.$

81. Find the value of discriminat for each of the following equations.

(iii) $\sqrt{5}x^2 - x - \sqrt{5} = 0$.

82. If one root of the quadratic equation $2x^2 + kx - 2 = 0$ is -2, find the value of k.

83. Two roots of quadratic equations are given, frame the equation.

10 and -10

84. Two roots of quadratic equations are given: frame the equation.

(ii) $1 - 3\sqrt{5}$ and $1 + 3\sqrt{5}.$

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85. Two roots of quadratic equations are given: frame the equation.

(iii) 0 and 7

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86. Solve the following quadratic equations: $3x^2$-7x+5=0

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87. Determine the nature of roots for each of the quadratic equation.

(ii) $\sqrt{3}x^2 + \sqrt{2}x - 2\sqrt{3} = 0$

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88. Determine the nature of roots for each of the quadratic equation.

(iii) $m^2 - 2m + 1 = 0$

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89. Solve the following quadratic equations.

(i) $\dfrac{1}{x+5} = \dfrac{1}{x^2}$

90. Solve the following quadratic equation:

$x^2 - \dfrac{3x}{10} - \dfrac{1}{10} = 0$

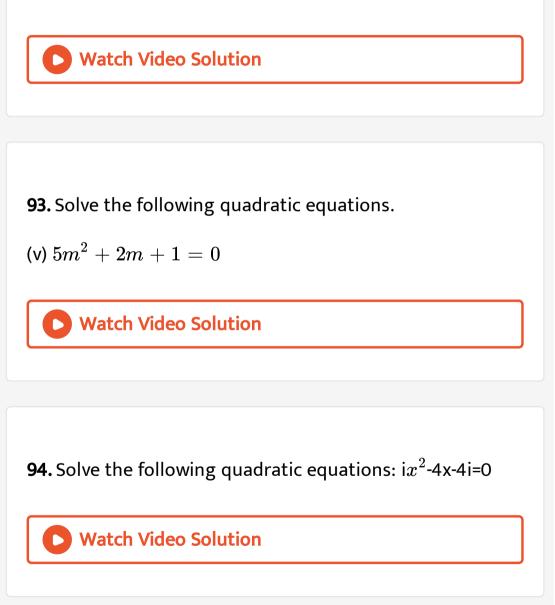**91.** Solve the following quadratic equations.

(iii) $(2x + 3)^2 = 25$

92. Solve the following quadratic equations.

(iv) $m^2 + 5m + 5 = 0$

93. Solve the following quadratic equations.

(v) $5m^2 + 2m + 1 = 0$

94. Solve the following quadratic equations: ix^2-4x-4i=0

95. Find m, if the quadratic equation $(m-1)x^2 - 2(m-1)x + 1 = 0$ has real and equal roots.

96. The sum of two roots of a quadratic equation is 5 and sum of their cubes is 35. Find the equation.

97. Find quadratic equation such that its roots are square of sum of the roots and square of difference of the roots of equation $2x^2 + 2(p+q)x + p^2 + q^2 = 0$

98. Mukund possesses Rs. 50 more than what Sagar possesses. The product of the amount they have is 15,000. find the amount each one has.

99. The difference between squares of two numbers is 120. The square of smaller number is twice the greater number. Find the numbers.

100. Ranjana wants to distribute 540 oranges among some students. If 30 students were more, each would get 3 oranges less. Find the number of students.

101. Mr. Dinesh owns an agricultural farm at village Talvel. The length of the farm is 10 meter more than twice the breadth. In order to harvest rain water, he dug a square shape pond inside the farm. The side of pond is $\frac{1}{3}$ times of the breadth of the farm. The area of the farm is 20 times the area of the pond. Find the length and breadth of the farm and of the pond.

102. A tank fills completely in 2 hours if both the taps are open. If only one of the taps is open at the given time, the smaller tap takes 3 hours more than the larger one to fill the tank. How much times does each tap take to fill the tank completely?

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1. Six years before, the age of mother was numerically equal to the square of son's age. Three years hence, her age will be thrice the age of her son then. Find the present

ages of the mother and son.

Write mother's age six years before.

2. Six years before, the age of mother was numerically equal to the square of son's age. Three years hence, her age will be thrice the age of her son then. Find the present ages of the mother and son.
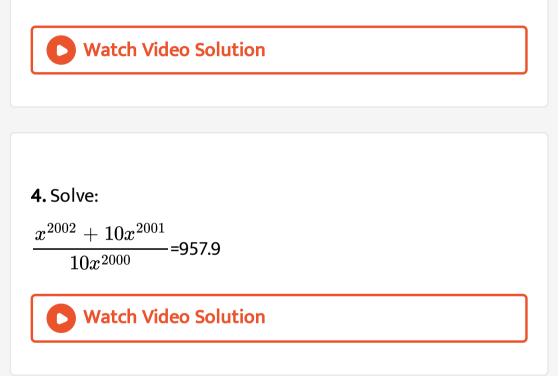
Write their present ages.

3. Six years before, the age of mother was numerically equal to the square of son's age. Three years hence, her

age will be thrice the age of her son then. Find the present ages of the mother and son.

Form a quadratic equation from the given condition and solve it.

4. Solve:

$$\frac{x^{2002} + 10x^{2001}}{10x^{2000}} = 957.9$$

5. Choose the correct alternative from those given below each question:

Which of the following is quadratic equation?

A. 6x^2=20-x^3

B. 3/x-3=4x^2

C. x^2(1/x-2)=7/2

D. 5x+7=3x

Answer:

6. What is the solution of the quadratic equation

$$2x^2 - 7x + 6 = 0?$$

A. (a) $2, \dfrac{2}{3}$

B. (b) -7.3333333333333

C. (c) -0.13636363636364

D. (d) $\dfrac{3}{2}, 2$

Answer:

7. Choose the correct alternative from those given below each question:

Which of the following is the value of the discriminant for

$2x^2 + 5\sqrt{3}x + 6 = 0$

A. 27

B. 123

C. 25sqrt3-48

D. 72

Answer:

8. Choose the correct alternative from those given below

each question:

Which of the following equations has roots-2 and 7 ?

    A. $x^2+5x-14=0$

    B. $x^2-5x-14=0$

    C. $x^2+5x+14=0$

    D. $x^2-5x+14=0$

Answer:

9. Choose the correct alternative from those given below

each question:

If α, β are root of quadratic equation then for which of the

following equations is $\alpha + \beta = 5$?

A. (a) $2x^2 + 10x + 25 = 0$

B. (b) $x^2 - 10x + 25 = 0$

C. (c) $3x^2 + 15x - 16 = 0$

D. (d) $3x^2 - 15x + 16 = 0$

Answer:

10. Choose the correct alternative from those given below

each question:

What is the nature of the roots of the quadratic equation

$4x^2 - 8x + 9 = 0$?

A. real

B. not real

C. real and equal

D. real and unequal

Answer:

11. Choose the correct alternative from those given below each question:

What is the nature of the roots of the quadratic equation $9x^2 + 25 = 30x$?`?

    A. real

    B. not real

    C. real and equal

    D. real and unequal

Answer:

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12. Choose the correct alternative from those given below each question:

What is the nature of the roots of the quadratic equation $2x^2 - 3x - 4 = 0$?

    A. real

    B. not real

    C. real and equal

    D. real and unequal

Answer:

13. Choose the correct alternative from those given below each question:

What is the value of k for which the quadratic equation $3x^2-kx+k=0$ has equal roots?

A. 3

B. 6

C. 9

D. 12

Answer:

14. If α, β are roots of qadratics equation then for which of the following equations is $\alpha + \beta = 11$ and $\alpha\beta = 33$?

A. (a) $x^2 - 11x + 33 = 0$

B. (b) $x^2 - 11x - 33 = 0$

C. (c) $x^2 + 11x + 33 = 0$

D. (d) $x^2 + 11x - 33 = 0$

Answer:

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15. Choose the correct alternative from those given below each question:

What is the value okf K, if one root of the quadratic equation

$$kx^2 - 7x + 12 = 0 \text{ is } 3 \text{ ?}$$

A. 1

B. -1

C. 3

D. -3

Answer:

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16. Choose the correct alternative from those given below

each question:

If one of the roots of the quadratic equation

$kx^2 + 2x - 8 = 0$ is -2, then what is the value of k ?

A. 2

B. 3

C. 1

D. 4

Answer:

17. Choose the correct alternative from those given below

each question:

If for a quadratic equation

$b^2 - 4ac = 0$, then which of the following statements is true ?

A. The roots are real and unequal

B. The roots are real and equal

C. The roots are not real

D. The roots are irrational

Answer:

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18. Determine whether the value given against each of the qaudratic equation are the roots of the equation.

(ii) $2x^2 - 7x + 6 = 0, x = \dfrac{3}{2}, -2.$

A. (a) $2, \quad -\dfrac{2}{3}$

B. (b) $2, \quad -\dfrac{3}{2}$

C. -2.6666666666667

D. -3.5

Answer:

19. Choose the correct alternative from those given below

each question:

For the quadratic equation

$x^2 + 10x - 7 = 0$, the values of a,b,c are.....

A. a=-1,b=10,c=7

B. a=1,b=-10,c=-7

C. a=1,b=10,c=-7

D. a=1,b=10,c=7

Answer:

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20. Write the following quadratic equations in the standard form:

$$3y^2 = 8y - 5$$

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21. Write the following quadratic equations in the standard form:

$$4z^2 + 7 = 3z$$

22. Write the following quadratic equations in the standard form:

$$5y + 4 = y^2$$

23. Write the following quadratic equations in the standard form:

$$3x^2 = 10x + 7$$

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24. Is x=-1 a root of the quadratic equation

$$x^2 - 3x - 4 = 0?$$

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25. What are the roots of the following quadratic

equations?

$$p^2 - 9 = 0$$

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26. What are the roots of the following quadratic equations?

$$x^2 + 3x + 2 = 0$$

27. What are the roots of the following quadratic equations?

$$x^2 + x - 6 = 0$$

28. What are the roots of the following quadratic equations?

$$(x + 5)(x - 2) = 0$$

29. For solving the following quadratic equations by completing square method, find the third terms:

$$x^2 + 8x = 15$$

30. For solving the following quadratic equations by completing square method, find the third terms:

$$y^2 - 3y - 10 = 0$$

31. For solving the following quadratic equations by completing square method, find the third term:

$$4m^2 - 8m + 5 = 0$$

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32. Determine the nature of the roots if

`b^2-4ac=0

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33. Determine the nature of the roots if

`b^2-4ac gt 0

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34. Determine the nature of the roots if

`b^2-4ac lt 0

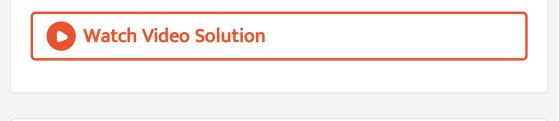**35.** Find the value of the discriminant (Delta) in each of the following quadratic equations :

$$x^2 + 4x + 4 = 0$$

36. Find the value of the discriminant (Delta) in each of the following quadratic equations :

$$y^2 - 3y - 10 = 0$$

37. Find the value of the discriminant (Delta) in each of the following quadratic equations :
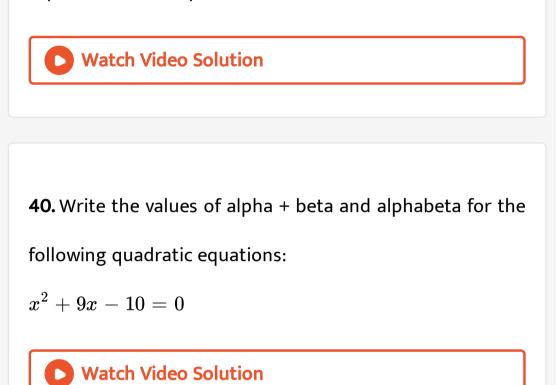
$$4m^2 - 8m + 5 = 0$$

38. Write the quadratic equations in variable x, if

`alpha + beta = -6, alphabeta=4

39. Write the quadratic equations in variable x, if

`alpha + beta = 8, alphabeta= -3

40. Write the values of alpha + beta and alphabeta for the following quadratic equations:

$$x^2 + 9x - 10 = 0$$

41. Write the values of alpha + beta and alphabeta for the following quadratic equations:

$$4x^2 - 5x + 3 = 0$$

42. Find the values of a and b from the quadratic equation by comparing with general form:
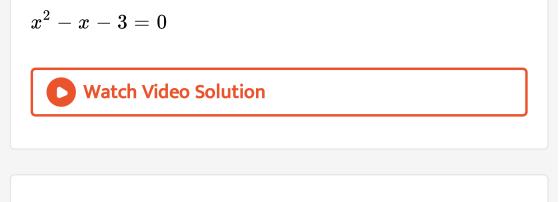
$$2x^2 - 5x + 7 = 0$$

43. If the roots of $2x^2 - 6x + k = 0$ are real and equal , find k.

44. Find the values of a,b and c for the following quadratic equations by comparing with general form:

$$x^2 - x - 3 = 0$$

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45. Find the values of a,b and c for the following quadratic equations by comparing with general form:

$$2x^2 - 3x + 7 = 0$$

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46. Find the values of a,b and c for the following quadratic equations by comparing with general form:

$$5x^2 + 7x + 2 = 0$$

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47. Find the values of a,b and c for the following quadratic equations by comparing with general form:

$$6x^2 - 13x + 6 = 0$$

48. Solve :

$$x^2 + 8x + 15 = 0$$

49. If a=1,b=8,c=15, find the value of b^2-4ac.

50. Form quadratic equations from the information given below:

The sum of seven times a natural number (x) and its square is 60.

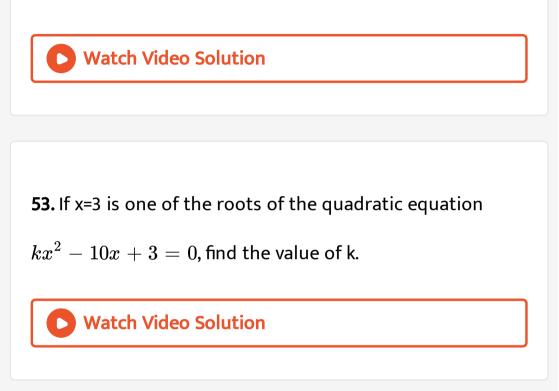**51.** Form quadratic equations from the information given below:

The sum of a number (m) and its reciprocal is 10/3.

52. If one root of the quadratic equation

$x^2 - 7x + k = 0$ is 2, find the value of K.

53. If x=3 is one of the roots of the quadratic equation

$kx^2 - 10x + 3 = 0$, find the value of k.

54. Complete the following activity to find the value of the

discriminant for the quadratic equations:

$4x^2 - 5x + 3 = 0$ Here a=4,b=....,c=3

55. Find the value of the discriminant of each of the following quadratic equations:

$x^2 + 4x + 3 = 0$

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56. Find the value of the discriminant of each of the following quadratic equations:

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

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57. Find the value of the discriminant of each of the following quadratic equations:

$$x^2 - 6x + k = 0$$

58. Determine the nature of the roots of the following equations from their discriminants:

$$4x^2 + 12x + 9 = 0$$

59. Determine the nature of the roots of the following equations from their discriminants:

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

60. Determine the nature of the roots of the following equations from their discriminants:

$$\sqrt{3}x^2 + 10x - 8\sqrt{3} = 0$$

61. Find the values of alpha + beta and alphabeta for the following quadraic equations:

$$4x^2 + 12x + 9 = 0$$

62. Find the values of alpha + beta and alphabeta for the following quadraic equations:

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

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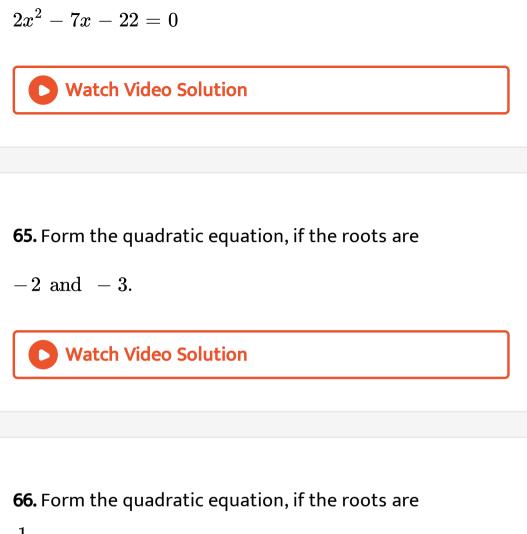**63.** Find the values of alpha + beta and alphabeta for the following quadraic equations:
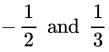
$$x^2 + x + 2 = 0$$

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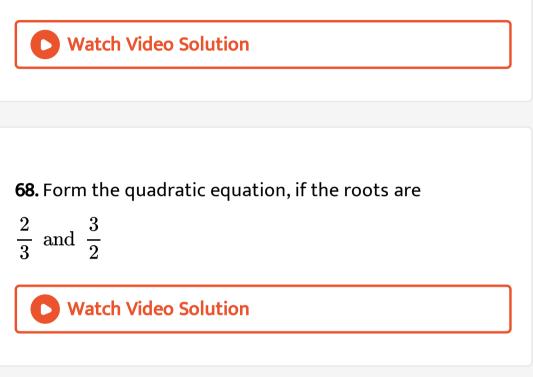
64. Find the values of alpha + beta and alphabeta for the following quadraic equations:

$$2x^2 - 7x - 22 = 0$$

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65. Form the quadratic equation, if the roots are

-2 and -3.

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66. Form the quadratic equation, if the roots are

$\dfrac{1}{2}$ and -4

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67. Form the quadratic equation, if the roots are

$-\dfrac{1}{2}$ and $\dfrac{1}{3}$

68. Form the quadratic equation, if the roots are

$\dfrac{2}{3}$ and $\dfrac{3}{2}$

69. Form the quadratic equation, if the roots are

$3 \ \text{and} \ 8$

A. Form the quadratic equation, if the roots are

B.

C.

D.

Answer:

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70. Form the quadratic equation, if the roots are

`-3 and-7

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71. Form the quadratic equation, if the sum of the roots is 24 and the product of the roots is 140.

72. Solve the quadratic equation $\sqrt{3}x^2 + 4x - 7\sqrt{3} = 0$ by factorisation method.

73. One of the roots of the quadratic equation $kx^2 - 3x - 1 = 0$ is 1/2. Complete the following activity to find the value of k.

74. Solve the following quadratic equations by factorisation method:

$$6x^2 + 7x - 24 = 0$$

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75. Solve the following quadratic equations by factorisation method:

$$7y = -3y^2 - 4$$

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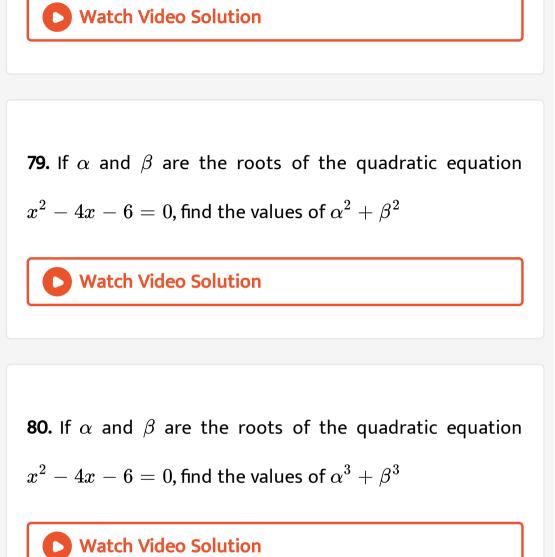**76.** Solve the following quadratic equations by the method of completing square:

$$x^2 + 3x + 1 = 0$$

77. Solve the following quadratic equations by the method of completing square:
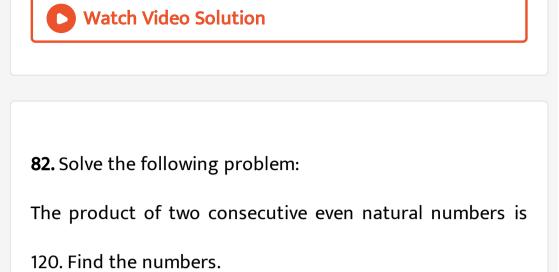
$$x^2 = 3 + 4x$$

78. Determine the nature of roots for the quadratic equation: $\sqrt{3}x^2 + \sqrt{2}x - 2\sqrt{3} = 0$

79. If α and β are the roots of the quadratic equation $x^2 - 4x - 6 = 0$, find the values of $\alpha^2 + \beta^2$

80. If α and β are the roots of the quadratic equation $x^2 - 4x - 6 = 0$, find the values of $\alpha^3 + \beta^3$

81. If x=4 is one of the roots of the quadratic equation $3x^2 + kx - 2 = 0$, find the value of k.

82. Solve the following problem:

The product of two consecutive even natural numbers is 120. Find the numbers.
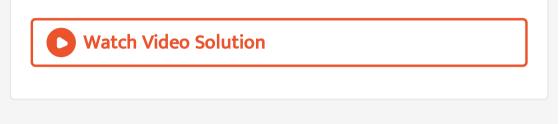
83. Solve the following problem:

The difference between the square of a natural number and the number itself is 110. Find the number.

84. Write the quadratic equation.

(p^2+5)/3p^2 =-7 in the standard form. Find the value of its

discriminant. Wrte the nature of its roots.

85. Complete the following activity to solve the equation

$x^2 - 10x - 2 = 0$ using formula :

86. alpha and beta are the roots of

$x^2 - 3x - 7 = 0$. Complete the following activity to find

the value of

$\alpha^3 + \beta^3.$

87. The question based on the opportunity to express one's opinion.

Answer the following questions , with reasons, based on the quadratic equation

$x^2 - 2x - 5 = 0$

Is it a quadratic equation?

88. The question based on the opportunity to express one's opinion.

Answer the following questions , with reasons, based on the quadratic equation

$$x^2 - 2x - 5 = 0$$

Can this equation be solved by factorisation method ?

89. The question based on the opportunity to express one's opinion.

Answer the following questions , with reasons, based on the quadratic equation

$$x^2 - 2x - 5 = 0$$

Which term should be added to make the polynomial `x^2-2x a perfect square?

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90. Construct a word problem on quadratic equatiion, such that one of its answers is 20 and solve it.

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91. A dealer sells a toy for Rs 24 and gain as much percent as the cost price of the toy. Find the cost price of toy.

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92. Solve the following problem:

The product of four consecutive natural numbers is 840. Find the numbers.

93. Solve the following problems:

A passenger train takes 2 hours more than an express train to travel a distance of 240 km . The speed of the express train is more than that of passenger train by 20 km/h. Find the speed of both the trains.

94. Solve the following problems :

The distance between Akola and Bhusaval is 168 km. An express train takes 1 hour less than passenger train to cover that distance . Find the average speed of each train, if the average speed of the express train is more by 14 km/h than the speed of the passenger train.

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95. Solve the following problems:

Around a square pool, there is a footpath of width 2 m. If the area of the footpath is 5/4 times that of the pool, find the area of the pool.

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96. Solve the following problems :

Yogesh required 3 days more than vivek to do a work. If both of them work together, the work can be completed in 2 days . Find the number of days required by each of them to complete the work.

97. Two pipes running together can fill a cinstern in $3\frac{1}{13}$ minutes.If one pipe takes 3 minutes more than the other to fill it,find the time in which each pipe would fill the cistern.

98. Solve the following problems :

The sum of the areas of two squares is 400 sq m. If the difference between their perimeters is 16 m. Find the sides of two squares.

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99. Solve the following problems:

If one root of the quadratic equation

$ax^2 + bx + c = 0$ is half of the other root, show that b^2=9ac/2.

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100. Solve the following problems:

Solve : $\dfrac{1}{4-p} - \dfrac{1}{2+p} = \dfrac{1}{4}$.