



MATHS

BOOKS - MBD NCERT SOLUTIONS

QUADRATIC EQUATIONS

Short Answer Types Questions

1. Find the roots of the equation $5x^2 - 6x - 2 = 0$ by the method of completing the square.



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2. Find two consecutive positive integers sum of whose squares is 365.



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3. In the following, determine whether the given quadratic equations have real roots and

if so, find the roots: $2x^2 + 5\sqrt{3}x + 6 = 0$ (ii)

$$\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$$





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4. Find the roots of the following equations :

$$(i) \quad x - \frac{1}{x} = 3, x \neq 0 \quad (ii)$$

$$\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}, x \neq -4, 7$$



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5. Find the roots of the following equations :

$$(i) \quad x - \frac{1}{x} = 3, x \neq 0 \quad (ii)$$

$$\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}, x \neq -4, 7$$



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6. Find two numbers whose sum is 27 and product is 182.



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7. The altitude of a right triangle is 7 cm less than its base. If the hypotenuse is 13 cm, find the other two sides.



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8. The sides of a right angle triangle is 17cm less than the other side. Its length of hypotenuse is 25cm . Find the length of sides.



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9. The area of a rectangular plot is 528m^2 . The length of the plot (in metres) is one metre more than twice its breadth. Find the length and the breadth of the plot.



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10. Find the values of k for each of the following quadratic equations, so that they have two equal roots. (i) $2x^2 + kx + 3 = 0$ (ii) $kx(x - 2) + 6 = 0$



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Long Answer Types Questions

1. The difference of squares of two numbers is 180. The square of the smaller number is 8

times the larger number. Find the two numbers.



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2. The diagonal of a rectangular field is 60 metres more than the shorter side. If the longer side is 30 metres more than the shorter side, find the sides of the field.



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3. A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 1 hour less for the same journey. Find the speed of the train.



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4. A train travels 180 km at a uniform speed. If the speed had been 9 km/hour more, it would have taken 1 hour less for the same journey. Find the speed of the train.





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5. An express train takes 1 hour less than a passenger train to travel 132 km between Mysore and Bangalroe. if the average speed of the express train is 11 km/hr more than that of the passenger train, form the quadratic equation to find the average speed of express train.



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6. An express train takes 1 hour less than a passenger train to travel 132 km between Mysore and Bangalore. If the average speed of the express train is 11 km/hr more than that of the passenger train, form the quadratic equation to find the average speed of express train.



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7. In a class test, the sum of Shefal's marks in Mathematics and English is 30. Had she got 2 marks more in Mathematics and 3 marks less in English, the product of their marks would have been 210. Find her marks in the two subjects.



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8. A motor boat whose speed is 18 km/h in still water takes 1 hour more to go 24 km upstream

than to return downstream to the same spot.

Find the speed of the stream.



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9. Is it possible to design a rectangular mango grove whose length is twice its breadth and the area is $800m^2$? If so, find its length and breadth.



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10. Is the following situation possible? If so, determine their present ages. The sum of the ages of two friends is 20 years. Four years ago, the product of their ages in years was 48.



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11. Is it possible to design a rectangular park perimeter if $80m$ and area is $400m^2$ its length and breadth.



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