

PRACTICE TEST: CLASS-X

QUADRATIC EQUATIONS

Q1. Two water taps together can fill a tank in $\frac{75}{8}$ hours. The larger tank takes 10 hours less than the smaller one to fill the tank separately. Formulate the quadratic equation to find the time in which each tap can separately fill the tank.

Q2. Solve the following quadratic equations by factorization method :

I) $x^2 + ([a/a+b] + [a+b/a])x + 1 = 0$.

II) $\frac{1}{(x-1)(x-2)} + \frac{1}{(x-2)(x-3)} + \frac{1}{(x-3)(x-4)} = \frac{1}{6}$.

Q3. Find the roots of the equation $a^2x^2 - 3abx + 2b^2 = 0$ by the method of completing the square.

Q4. If the roots of the equations $(a^2+b^2)x^2 - 2(ac+bd)x + (c^2+d^2) = 0$ are equal, prove that $a/b = c/d$.

Q5. One-fourth of a herd of camels was seen in the forest. Twice the square root of the herd had gone to mountains and the remaining 15 camels were seen on the bank of the river. Find the total number of camels.

Q6. The denominator of a fraction is one more than the twice the numerator. If the sum of the fraction and its reciprocal is $\frac{58}{21}$, find the fraction.

Q7. Seven years ago Varun's age was five times the square of Swati's age. Three years hence Swati's age will be two fifth of Varun's age. Find their present ages.

Q8. There is a square field whose side measures 44m. A square flower bed is prepared in its centre leaving a gravel path all round the flower bed. The total

cost of laying the flower bed and gravelling the path at Rs 2.75 and Rs 1.50 per square meter, respectively, is Rs 4904. Find the width of the gravel path.

Q9. In a class test, the sum of Nandhana'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 her marks would have been 210. Find her marks in two subjects.

Q10. A factory kept increasing its output by the same percentage every year. Find the percentage if it is known that the output is doubled in the last two years.

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