

## PRACTICE TEST: CLASS-X

### QUADRATIC EQUATIONS

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Q1. Solve the following by factorization method :

- a)  $4x^2 - 4a^2x + (a^4 - b^4) = 0$ .
- b)  $\frac{1}{(x-1)(x-2)} + \frac{1}{(x-2)(x-3)} + \frac{1}{(x-3)(x-4)} = \frac{1}{6}$ .

Q2. Solve :

- a)  $(x-3)(x-4) = \frac{34}{(33)^2}$
- b)  $\frac{(x-a)}{(x-b)} + \frac{(x-b)}{(x-a)} = \frac{a}{b} + \frac{b}{a}$ .

Q3. If the roots of the equation  $x^2 + 2cx + ab = 0$  are real unequal, prove that the equation  $x^2 - 2(a+b)x + a^2 + b^2 + 2c^2 = 0$  has no real roots.

Q4. 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.

Q5. The sum of the squares of two consecutive multiples of 7 is 637. Find the multiples.

Q6. Two water taps together can fill a tank in  $\frac{75}{8}$  hours. The larger 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.

Q7. Swati can row her boat at a speed of 5km/hr in still water. If it takes her 1 hour more to row the boat 5.25km upstream than to return downstream, find the speed of the stream.

Q8. The angry Arjun carried some arrows for fighting with Bheeshm. With half of the arrows, he cut down the arrows thrown by Bheeshm on him with six other arrows he killed the rath driver of Bheeshm. With one arrow each he knocked down respectively the rath, flag and the bow of Bheeshm. Finally, with one more than four times the square root of the arrows he laid Bheeshm unconscious on an arrow bed. Find the total number of arrows Arjun had.