SUCCESS INSTITUTE Assignment - 43 10th Class Expert

Q1. Find the value of k for each of the following quadratic equations, so that they have two equal roots.
(i) $2x^2 + kx + 3 = 0$ (ii) $4x^2 + px + 3 = 0$ (iii) $kx(x-2) + 6 = 0$ (iv) $kx^2 - 5x + k = 0$

Ans. (i) $\pm 2\sqrt{6}$ (ii) $\pm 4\sqrt{3}$ (iii) 6 (iv) $\pm\frac{5}{2}$

Q2. Find the value of m so that the quadratic equation $mx(x-7) + 49 = 0$ has two equal roots. Ans. 0 or 4

Q3. Find the value of p so that the quadratic equation $px(x-3) + 9 = 0$ has two equal roots. Ans. 0 or 4

Q4. Find the value of k so that the quadratic equation $2x^2 - kx + k = 0$ has two equal roots. Ans. 0 or 8

Q5. Find the value of k so that the quadratic equation $x^2 - 4kx + k = 0$ has two equal roots. Ans. 0 or $\frac{1}{4}$

Q6. Find the value of p so that the quadratic equation $px^2 - 2\sqrt{5}px + 15 = 0$ has two equal roots. Ans. 0 or 3

Q7. Find the value of k so that the quadratic equation $x^2 + 2\sqrt{2}kx + 18 = 0$ has two equal roots. Ans. ± 3

Q8. Find the value of k so that the quadratic equation $x^2 + 2(k+1)x + k^2 = 0$ has two equal roots. Ans. $-\frac{1}{2}$

Q9. Find two numbers whose sum is 27 and product is 182. Ans. 13 and 14

Q10. Find two numbers whose sum is 29 and product is 210. Ans. 14 and 15

Q11. Find two consecutive positive integers , sum of whose squares is 365. Ans. 13 and 14

Q12. The sum of the squares of two consecutive natural numbers is 313. Find the numbers. Ans. 12 and 13

Q13. Find two consecutive odd positive integers, sum of whose squares is 290. Ans. 11 and 13

Q14. Find two consecutive even positive integers, sum of whose squares is 340. Ans. 12 and 14

Q15. The sum of the two numbers is 9 and sum of their reciprocals is $\frac{1}{2}$. $Find\ the\ numbers.$ Ans. 3 and 6

Q16. The sum of the two numbers is 15 and sum of their reciprocals is $\frac{3}{10}$. $Find\ the\ numbers.$ Ans. 10 and 5

Q17. The difference of two natural numbers is 5 and the difference of their reciprocals is $\frac{1}{10}$. $Find\ the\ numbers.$
Ans. 5 and 10

Q18. The difference of two natural numbers is 4 and the difference of their reciprocals is $\frac{4}{21}$. $Find\ the\ numbers.$
Ans. 7, 3 or $-3, -7$

Q19. The difference of square of two numbers is 180. The square of the smaller number is 8 times the larger number. Find the two numbers. Ans. 18, 12 or 18, -12

Q20. The difference of square of two numbers is 88. If the larger number is 5 less than twice the smaller number. Find the two numbers. Ans. 13, 9

Q21. The product of two consecutive positive integers is 306. Find the integers. Ans. 17, 1 8

Q22. The product of two consecutive positive integers is 240. Find the integers. Ans. 15, 1 6