Quadratic Equations
Worsheet-3
Module -3/3

Choose the Correct Answer

1. If no root of $x^2 - kx + 1 = 0$ is real, then
   A) *-3<k<3*   B) *-2<k<2*   C) *k>2*   D) *k<-2*

2. Value of k for which the equation $2x^2 - kx + k = 0$ has equal roots is
   A) 0 only   B) 4   C) 8 only   D) 0,8

3. The value of k for which $3x^2 + 2x + k = 0$ has real roots is:
   A) $k > \frac{1}{2}$ B) $k \le \frac{1}{3}$ C) $k \ge \frac{1}{3}$ D) $k < \frac{1}{3}$

4. If the discriminant of the equation $6x^2 - bx + 2 = 0$ is 1, then the value of b is
   A) 7   B) -7   C) ± 7 D) $\pm \sqrt{7}$

5. $ax^2 + bx + c = 0, a > 0, b = 0, c > 0$ has
   A) two equal real roots   B) one real root   C) two distinct real roots   D) no real roots

Short Answer Questions Type -1

6. Find the value of p, for which one root of the quadratic equation $px^2 - 14x + 8 = 0$ is 6 times the other.

7. Is the following situation possible? The sum of ages of a mother and her daughter is 25 years. Five years ago the product of their ages was 58.

8. For what vale of k, the given equation $(4 - k)x^2 + (2k + 4)x + (8k + 1) = 0$ is a perfect square?

9. Find the value of k for which the equation $(4 - k)x^2 + (2k + 4)x + (8k + 1) = 0$ is a perfect square?

10. Find the value of $\sqrt{6 + \sqrt{6 + \sqrt{6 + \cdots}}}$

Short Answer Questions Type -2

11. Solve the equation $\frac{4}{x} - 3 = \frac{5}{2x+3}; x \neq 0, -\frac{3}{2}$, for x.

12. Solve for x: $x^2 + 5x - (a^2 + a - 6) = 0$

13. A two digit number is such that the product of its digits is 15. If 18 is added to the number, the digits interchange their places. Find the number.

14. the area of a right angled triangle is 600 sq cm. If the base of the triangle exceeds the altitude by 10 cm, find the dimensions of the triangle.

15 The age of father is equal to the square of the age of his son. The sum of the age of father and five times the age of the son is 66 years. Find their ages.

Long Answer Questions

16. Solve for x: $\frac{x-2}{x-3} + \frac{x-4}{x-5} = \frac{10}{3}, x \neq 3, 5$.

17. A person on tour has Rs360 for his daily expenses. If he exceeds his tour programme by 4 days, he must cut down his daily expenses by Rs 3 per day. Find the number of days of his tour programme.

18. The difference of mother's age and her daughter's age is 21 years and the twelfth part of the product of their ages is less than the mother's age by 18 years. Find their ages.

19. Two pipes running together can fill a cistern in 6 minutes. If one pipe takes 5 minutes more than the other to fill the cistern, find the time in which each pipe would fill the cistern.

20. One fourth of a group of people claim they are creative, twice the square root of the people claims to be caring and the remaining 15 claims they are optimistic.
    I.   Find the number of people in the group.
    II. How many people in the group are creative?

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