QB365

Important Questions - Quadratic Equations

10th Standard CBSE

Maths Reg.No. : | | | | | | |

Time : 01:00:00 Hrs

Total Marks : 50

Section - A

1) The quadratic equation $2x^2 + 5\sqrt{3}x + 6 = 0$ has ..... roots. **1**

2) Find the value of k, if $(k + 4)x^2 + (k + 1)x + 1 = 0$ has equal roots. **1**

3) (x - 2) (x + 1) = (x - 1) (x + 3) represent a quadratic equation. **1**

(a) True (b) False

4) A quadratic equation in the variable x is of the form $ax^2 + bx + c = 0, a \neq 0$, where a, b and c are real numbers. **1**

(a) False (b) True

5) $x = \frac{1}{2}$ is a root of $2x^2 + 3x - 1 = 0$. **1**

(a) False (b) True

6) The sum of a real number x and its reciprocal from a quadratic equation. **1**

(a) False (b) True

7) The sum of the areas of two squares is 640m2. If the difference in their perimeters be 64m^2 find the sides of the two squares. **1**

8) Write the nature of the roots of quadratic equation 16x^2-24x+9=0 **1**

9) Find the solution of the quadratic equation $x^2 - b^2 = a(2x - a)$. **1**

10) If the equation $px^2 + 4x - 3 = 0$ has real roots, then find the value of p **1**

Section - B

11) Check whether the following are quadratic equations: (x+2)^3=2x(x^2-1) **2**

12) Is x=-4 a solution of the equation 2x^2+5x-12=0 **2**

13) Solve the following equation by the method of completing the square: 2x^2+4x-16-0 **2**

14) Solve for x: $\frac{2x}{x-3} + \frac{1}{2x+3} + \frac{3x+9}{(x-3)(2x+3)} = 0$ **2**

15) For what value of k does (k-12)x^2+2(k-12)x+2=0 have equal roots? **2**

16) Determine whether the given quadratic equations have real roots, if so, find the roots: 6x^2+x-2=0 **2**

17) Solve for x. **2**

$x^2 - (\sqrt{3+1}) + \sqrt{3} = 0$

18) If 2 is a root of the equation $x^2 + kx + 12 = 0$ and the equation $x^2 + kx + q = 0$ has equal roots find the value of q **2**

19) Solve for x: $\frac{1}{a+b+x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{x}; a \neq 0, b \neq 0, x \neq 0$ **2**

20) Find the roots of the quadratic equation $\frac{1}{x-3} - \frac{1}{x+5} = \frac{1}{6}; x \neq 3, -5$ **2**

Section - C

21) Which of the following are quadratic equations? **5**

$(i) x + \frac{3}{x} = x^2$

$(ii) 2x^2 - 5x - x^2 - 2x + 3$

$(iii) x^2 - \frac{1}{x^2} = 5$

$(iv) x^2 - 3x - \sqrt{x} + 4 = 0$

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

22) Solve for x: $2(\frac{2x-1}{x+3}) - 3(\frac{x+3}{2x-1}) = 5$; given that $x \neq -3, x \neq \frac{1}{2}$ **5**

23) Solve the following for x : $\frac{1}{2a+b+2x} = \frac{1}{2a} + \frac{1}{b} + \frac{1}{2x}$ **5**

24) Find x in terms of a, band c **5**

$\frac{a}{x-a} + \frac{b}{x-b} = \frac{2c}{x-c}, x \neq a, b, c$

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