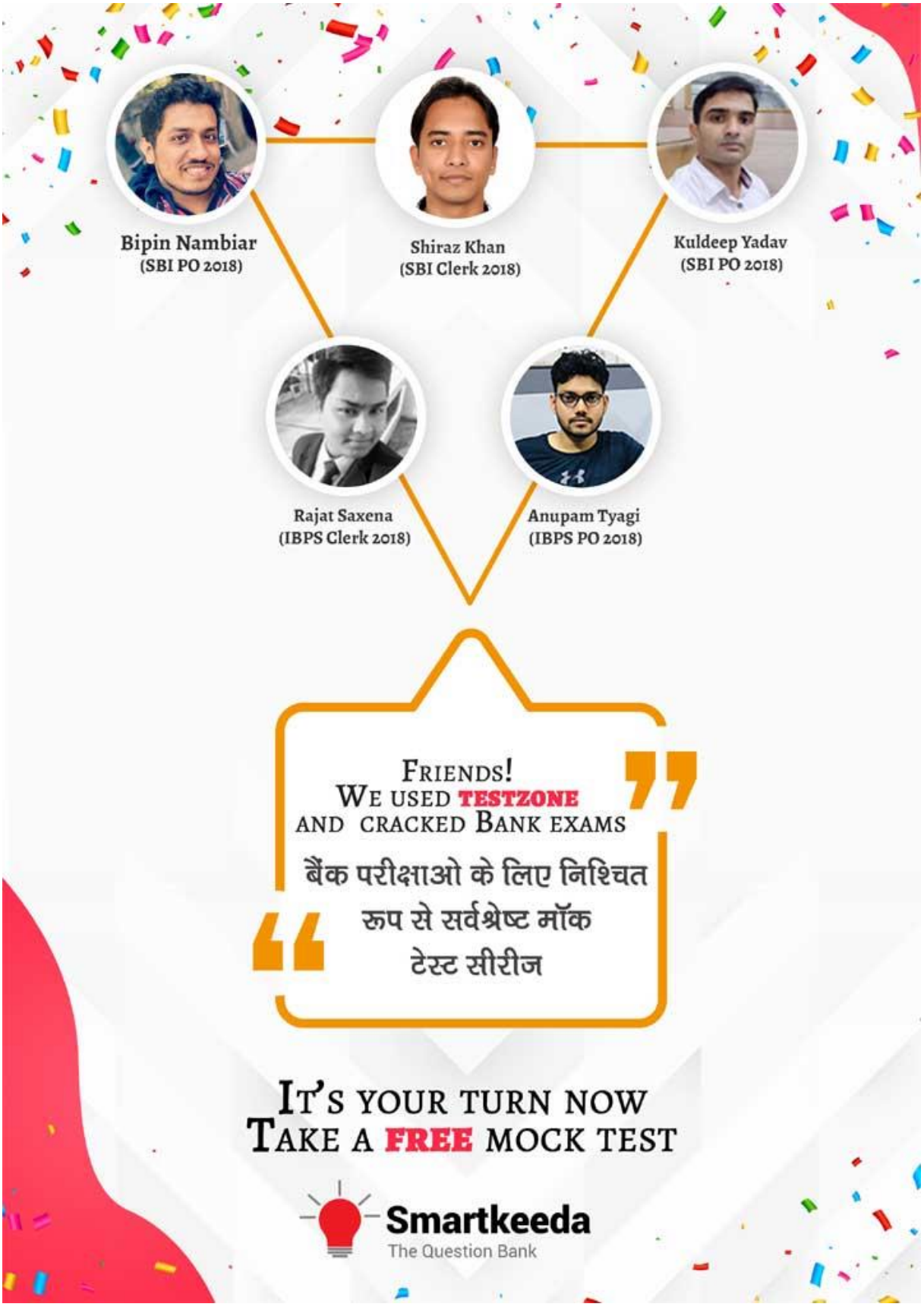
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The Question Bank

Quadratic Equation Questions for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains, IBPS Clerk Mains, LIC AAO Pre, RBI Assistant and RRB Scale I Pre Exams.

Quadratic Eqn. Quiz 29

Directions: In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer.

1. **I.** $20x^2 + 29x - 36 = 0$
II. $5y^2 - 14y + 8 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

2. **I.** $(x + 6)\left(8 - \frac{1}{x}\right) = 0$

II. $y^2 + \sqrt{576} = \sqrt{1089}$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

3. **I.** $x^4 \times 612 = x^6 \times 17$
II. $y^{2/3} \times 102 = 17 \times y^{5/3}$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

4. **I.** $88x^2 - 7x - 15 = 0$
II. $27y^2 - 6y - 8 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

5. **I.** $x^3 + \sqrt[3]{4913} = \sqrt{6561}$
II. $(\sqrt{y} - 4)\left(\frac{\sqrt{y}}{2} - 1\right) = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

6. **I.** $x^2 - 13x + 40 = 0$
II. $y^2 - 21y + 110 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

7. **I.** $x = (208 - 14^2) - 32$
II. $y = 8^3 - (21^2 \div 3) - 360$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

8. **I.** $x^2 = 30 - x$
II. $y^2 - 13y + 40 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

9. **I.** $35x^2 - 39x + 10 = 0$
II. $30y^2 + 2 = 17y$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

10. **I.** $18x^2 - 39x + 20 = 0$
II. $9y^2 - 51y + 52 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x = y or relationship between x and y can't be established

Correct Answers:

1	2	3	4	5	6	7	8	9	10
B	E	B	E	B	D	D	B	C	B

Explanations:

1. **I.** $20x^2 + 29x - 36 = 0$

$20x^2 + (45 - 16)x - 36 = 0$

$20x^2 + 45x - 16x - 36 = 0$

$5x(4x + 9) - 4(4x + 9) = 0$

$(4x + 9)(5x - 4) = 0$

$x = -9/4, 4/5$

II. $5y^2 - 14y + 8 = 0$

$5y^2 - (10 + 4)y + 8 = 0$

$5y^2 - 10y - 4y + 8 = 0$

$5y(y - 2) - 4(y - 2) = 0$

$(y - 2)(5y - 4) = 0$

$y = 2, 4/5$

While comparing the root values of x and y, we find that both the values of x are less than y's.
Therefore, $x \leq y$

Hence, option B is correct.

2.

I. $(x + 6)\left(8 - \frac{1}{x}\right) = 0$

$(x + 6)\left(\frac{8x - 1}{x}\right) = 0$

$(x + 6)(8x - 1) = 0$

$x = -6, 1/8$

II. $y^2 + \sqrt{576} = \sqrt{1089}$

$y^2 + 24 = 33$

$y^2 = 9$

$y = 3, -3$

Relationship between x and y cannot be established.

Hence, option E is correct.

3. **I.** $x^4 \times 612 = x^6 \times 17$
$612 = x^2 \times 17$
$x^2 = 36$
$x = \pm 6$

II. $y^{2/3} \times 102 = 17 \times y^{5/3}$
$y^{5/3} \div y^{2/3} = 6$
$y^{(5/3 - 2/3)} = 6$
$y = 6$

$x \leq y$
Hence, option B is correct.

4. **I.** $88x^2 - 7x - 15 = 0$
$88x^2 - (40 - 33)x - 15 = 0$
$88x^2 - 40x + 33x - 15 = 0$
$8x (11x - 5) + 3 (11x - 5) = 0$
$(8x + 3) (11x - 5) = 0$
$x = 5/11, -3/8$

II. $27y^2 - 6y - 8 = 0$
$27y^2 - (18 - 12)y - 8 = 0$
$27y^2 - 18y + 12y - 8 = 0$
$9y (3y - 2) + 4 (3y - 2) = 0$
$(3y - 2) (9y + 4) = 0$
$y = 2/3, -4/9$

While comparing the root values of x and y, both the values of x's lies between the values of y's.
Hence, option E is correct.

5. **I.** $x^3 + \sqrt[3]{4913} = \sqrt{6561}$
$x^3 + 17 = 81$
$x^3 = 81 - 17$
$x^3 = 64$
$x = 4$

II. $(\sqrt{y} - 4) \left(\frac{\sqrt{y}}{2} - 1\right) = 0$

$(\sqrt{y} - 4) \frac{(\sqrt{y} - 2)}{2} = 0$
$(\sqrt{y} - 4) (\sqrt{y} - 2) = 0$
$\sqrt{y} - 4 = 0, \sqrt{y} - 2 = 0$
$y = 16, 4$
$x \leq y$
Hence, option B is correct.

6. **I.** $x^2 - 13x + 40 = 0$
$x^2 - 8x - 5x + 40 = 0$
$x(x - 8) - 5(x - 8) = 0$
$(x - 5)(x - 8) = 0$
$x = 5, 8$

II. $y^2 - 21y + 110 = 0$
$y^2 - 11y - 10y + 110 = 0$
$y(y - 11) - 10(y - 11) = 0$
$(y - 10)(y - 11) = 0$
$y = 10, 11$

After comparison of both equations, the conclusion is $x < y$

Hence, option D is correct.

7. **I.** $x = (208 - 14^2) - 3^2$
$x = (208 - 196) - 9$
$x = 12 - 9$
$x = 3$

II. $y = 8^3 - (21^2 \div 3) - 360$
$y = 512 - (441 \div 3) - 360$
$y = 512 - 147 - 360$
$y = 5$

After comparison of both equations, the conclusion is $x < y$

Hence, option D is correct.

8. **I.** $x^2 = 30 - x$
$x^2 + x - 30 = 0$
$x^2 + 6x - 5x - 30 = 0$
$x(x + 6) - 5(x + 6) = 0$
$(x - 5)(x + 6) = 0$
$x = 5, -6$

II. $y^2 - 13y + 40 = 0$
$y^2 - 5y - 8y + 40 = 0$
$y(y - 5) - 8(y - 5) = 0$
$(y - 8)(y - 5) = 0$
$y = 5, 8$

After comparison of both equations, the conclusion is $x \leq y$ or no relation

Hence, option B is correct.

9. **I.** $35x^2 - 39x + 10 = 0$
$35x^2 - 25x - 14x + 10 = 0$
$5x(7x - 5) - 2(7x - 5) = 0$
$(5x - 2)(7x - 5) = 0$

$x = \frac{2}{5}, \frac{5}{7}$

II. $30y^2 + 2 = 17y$
$30y^2 - 17y + 2 = 0$
$30y^2 - 12y - 5y + 2 = 0$
$6y(5y - 2) - 1(5y - 2) = 0$
$(6y - 1)(5y - 2) = 0$

$y = \frac{1}{6}, \frac{2}{5}$

After comparison of both equations, the conclusion is $x \geq y$

Hence, option C is correct.

10. **I.** $18x^2 - 39x + 20 = 0$
$18x^2 - 15x - 24x + 20 = 0$
$3x(6x - 5) - 4(6x - 5) = 0$
$(6x - 5)(3x - 4) = 0$

$x = \frac{5}{6}, \frac{4}{3}$

II. $9y^2 - 51y + 52 = 0$
$9y^2 - 12y - 39y + 52 = 0$
$3y(y - 4) - 13(y - 4) = 0$
$(3y - 4)(3y - 13) = 0$

$y = \frac{4}{3}, \frac{13}{3}$

After comparison of both equations, the conclusion is $x \leq y$

Hence, option B is correct.