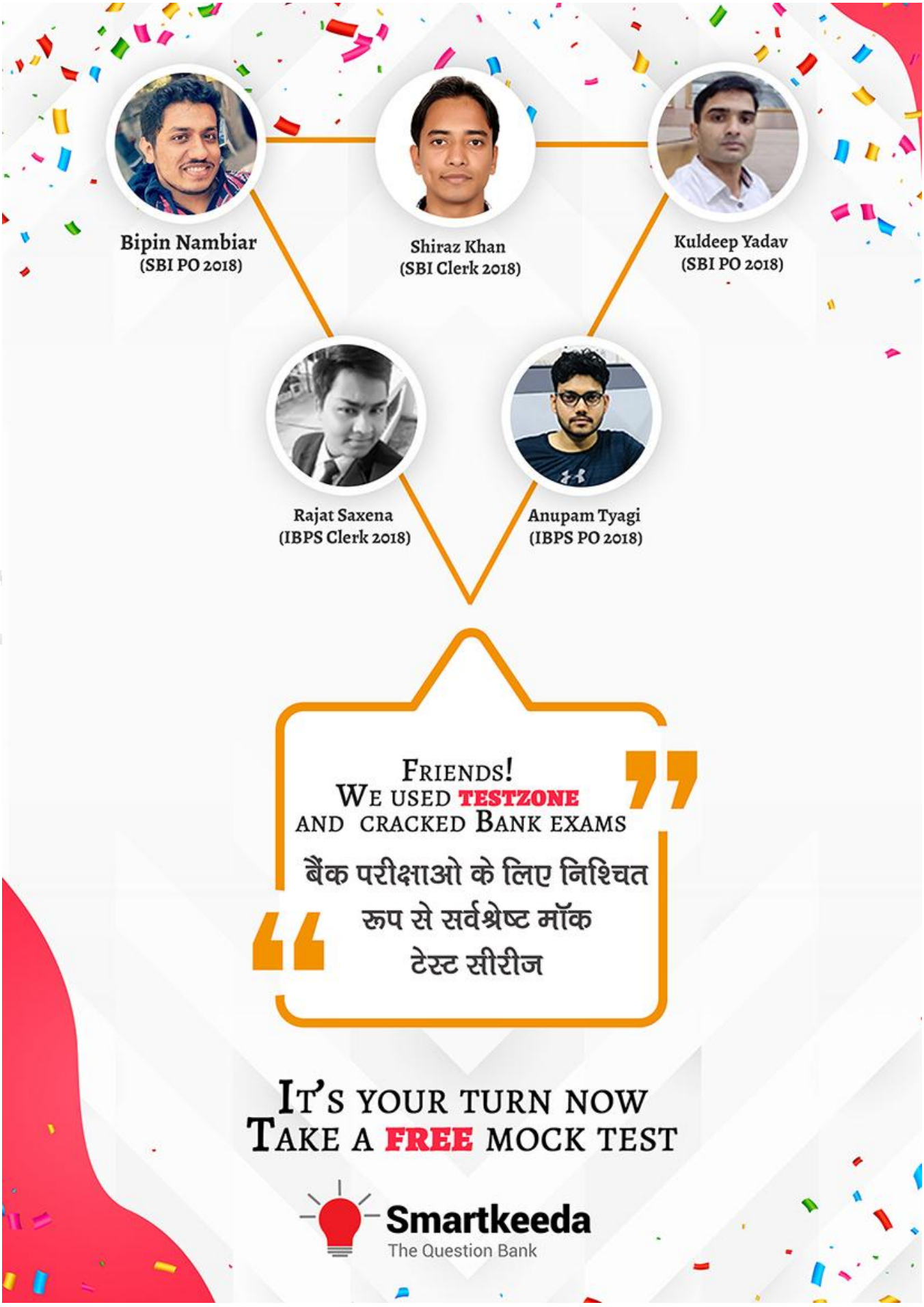
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The Question Bank

Quadratic Equation Questions for for SBI Clerk Pre, IBPS Clerk, RBI Assistant, LIC Assistant Exams.

Quadratic Equation Quiz 16

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. $15x^2 - 11x + 2 = 0$**
II. $10y^2 - 9y + 2 = 0$

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

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2. **I. $10x^2 - 7x + 1 = 0$**
II. $35y^2 - 12y + 1 = 0$

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

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3. **I. $x^2 - 6x = 7$**
II. $2y^2 + 13y + 15 = 0$

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

---

4. **I. $x^2 + 9x + 18 = 0$**
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

---

5. **I. $14x^2 - 5\sqrt{15}x - 90 = 0$**
II. $6y^2 + \sqrt{21}y - 21 = 0$

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. $2x^2 - 7x + 6 = 0$**
II. $y^2 - 5y + 4 = 0$

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. $x^2 + 5x - 14 = 0$**
II. $y^2 + y - 20 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x ≤ y or no relationship can be established between x and y.

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8. **I. $x^2 + 11x + 30 = 0$**
II. $y^2 + 4y + 3 = 0$

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

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9. **I. $18x^2 + 73x + 35 = 0$**
II. $30y^2 + 89y + 63 = 0$

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

---

10. **I. $18x^2 - 33x - 40 = 0$**
II. $12y^2 + 47y + 45 = 0$

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	C	A	D	E	E	E	D	E	A

Explanations:

1. **I.** $15x^2 - 11x + 2 = 0$
$15x^2 - 5x - 6x + 2 = 0$
$5x(3x - 1) - 2(3x - 1) = 0$
$(3x - 1)(5x - 2) = 0$
$x = \frac{1}{3}, \frac{2}{5}$

II. $10y^2 - 9y + 2 = 0$
$10y^2 - 5y - 4y + 2 = 0$
$5y(2y - 1) - 2(2y - 1) = 0$
$(2y - 1)(5y - 2) = 0$
$y = \frac{1}{2}, \frac{2}{5}$

Therefore, x ≤ y
Hence, option B is correct.

2. **I.** $10x^2 - 7x + 1 = 0$
$10x^2 - 5x - 2x + 1 = 0$
$5x(2x - 1) - 1(2x - 1) = 0$
$(5x - 1)(2x - 1) = 0$
$x = \frac{1}{5}, \frac{1}{2}$

II. $35y^2 - 12y + 1 = 0$
$35y^2 - 7y - 5y + 1 = 0$
$7y(5y - 1) - 1(5y - 1) = 0$
$(7y - 1)(5y - 1) = 0$
$y = \frac{1}{7}, \frac{1}{5}$

Therefore, $x \geq y$
Hence, option C is correct.

3. **I.** $x^2 - 6x = 7$
$x^2 - 6x - 7 = 0$
$x^2 - 7x + x - 7 = 0$
$x(x - 7) + 1(x - 7) = 0$
$(x + 1)(x - 7) = 0$
$x = -1, 7$

II. $2y^2 + 13y + 15 = 0$
$2y^2 + 10y + 3y + 15 = 0$
$2y(y + 5) + 3(y + 5) = 0$
$(2y + 3)(y + 5) = 0$
$y = -5, -\frac{3}{2}$

Hence, $x > y$
Hence, option A is correct.

4. **I.** $x^2 + 9x + 18 = 0$
$x^2 + 6x + 3x + 18 = 0$
$x(x + 6) + 3(x + 6) = 0$
$(x + 6)(x + 3) = 0$
$x = -6, -3$

II. $y^2 - 13y + 40 = 0$
$y^2 - 8y - 5y + 40 = 0$
$y(y - 8) - 5(y - 8) = 0$
$(y - 8)(y - 5) = 0$
$y = 8, 5$
Hence, $x < y$
Hence, option D is correct.

5. **I.** $14x^2 - 5\sqrt{15}x - 90 = 0$

$14x^2 - (12\sqrt{15} - 7\sqrt{15})\, x - 90 = 0$

$14x^2 - 12\sqrt{15}x + 7\sqrt{15}x - 90 = 0$

$2x(7x - 6\sqrt{15}) + \sqrt{15}(7x - 6\sqrt{15}) = 0$

$(2x + \sqrt{15})(7x - 6\sqrt{15}) = 0$

$x = -\frac{\sqrt{15}}{2}, \frac{6\sqrt{15}}{7}$

II. $6y^2 + \sqrt{21}y - 21 = 0$

$6y^2 + (3\sqrt{21} - 2\sqrt{21})\, y - 21 = 0$

$6y^2 + 3\sqrt{21}y - 2\sqrt{21}y - 21 = 0$

$3y(2y + \sqrt{21}) - \sqrt{21}(2y + \sqrt{21}) = 0$

$(3y - \sqrt{21})(2y + \sqrt{21}) = 0$

$y = \frac{\sqrt{21}}{3}, -\frac{\sqrt{21}}{2}$

Hence, no relation can be established.

Hence, option E is correct.

6. **From I:**

$2x^2 - 7x + 6 = 0$

$2x^2 - 3x - 4x + 6 = 0$

$x(2x - 3) - 2(2x - 3) = 0$

$(2x - 3)(x - 2) = 0$

$x = \frac{3}{2}, 2$

From II:

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

$y^2 - 4y - y + 4 = 0$

$y(y - 4) - 1(y - 4) = 0$

$(y - 4)(y - 1) = 0$

$y = 4, 1$

While comparing the root values of x and y, we find that one root value of y is lies between the values of x. Hence the relationship between x and y can't be established.

Hence, option E is correct.

7. **From I :**

$x^2 + 5x - 14 = 0$

$x^2 - 2x + 7x - 14 = 0$

$x(x - 2) + 7(x - 2) = 0$

$(x - 2)(x + 7) = 0$

$x = 2, -7$

From II:

$y^2 + y - 20 = 0$

$y^2 + 5y - 4y - 20 = 0$

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

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

$y = -5, 4$

While comparing the root values of x and y, we find that one root value of y is lies between the values of x. Hence the relationship between x and y can't be established.

Hence, option E is correct.

8. **From I:**

$x^2 + 11x + 30 = 0$

$x^2 + 6x + 5x + 30 = 0$

$x(x + 6) + 5(x + 6) = 0$

$(x + 6)(x + 5) = 0$

$x = -6, -5$

From II:

$y^2 + 4y + 3 = 0$

$y^2 + 3y + y + 3 = 0$

$y(y + 3) + 1(y + 3) = 0$

$(y + 3)(y + 1) = 0$

$y = -3, -1$

While comparing the root values of x and y, we find that root values of x is less than the values of y. Hence $x < y$.

Hence, option D is correct.

9. **From I:**

$18x^2 + 73x + 35 = 0$

$18x^2 + 63x + 10x + 35 = 0$

$9x(2x + 7) + 5(2x + 7) = 0$

$(2x + 7)(9x + 5) = 0$

$x = -\frac{7}{2}, -\frac{5}{9}$

From II:

$30y^2 + 89y + 63 = 0$

$30y^2 + 35y + 54y + 63 = 0$

$5y(6y + 7) + 9(6y + 7) = 0$

$(6y + 7)(5y + 9) = 0$

$y = -\frac{7}{6}, -\frac{9}{5}$

While comparing the root values of x and y, we find that one root value of y is lies between the values of x. Hence the relationship between x and y can't be established.

Hence, option E is correct.

10. **From I:**

$18x^2 - 33x - 40 = 0$

$18x^2 - 48x + 15x - 40 = 0$

$6x(3x - 8) + 5(3x - 8) = 0$

$(3x - 8)(6x + 5) = 0$

$x = \frac{8}{3}, -\frac{5}{6}$

From II:

$12y^2 + 47y + 45 = 0$

$12y^2 + 27y + 20y + 45 = 0$

$3y(4y + 9) + 5(4y + 9) = 0$

$(4y + 9)(3y + 5) = 0$

$y = -\frac{9}{4}, -\frac{5}{3}$

While comparing the root values of x and y, we find that root values of y are less than the values of x. Hence $x > y$.

Hence, option A is correct.