Bipin Nambiar
(SBI PO 2018)

Shiraz Khan
(SBI Clerk 2018)

Kuldeep Yadav
(SBI PO 2018)

Rajat Saxena
(IBPS Clerk 2018)

Anupam Tyagi
(IBPS PO 2018)

FRIENDS!
WE USED **TESTZONE**
AND CRACKED BANK EXAMS

बैंक परीक्षाओ के लिए निश्चित
रूप से सर्वश्रेष्ट मॉक
टेस्ट सीरीज

IT'S YOUR TURN NOW
TAKE A **FREE** MOCK TEST

Smartkeeda
The Question Bank

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

Quadratic Equation Quiz 4

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. $25x^2 - 90x + 72 = 0$** **II. $y^2 + 26y + 168 = 0$**

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. $20x^2 - 108x + 144 = 0$** **II. $8y^2 + 18y + 4 = 0$**

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

---

3. **I. $3x^2 - 8x - 16 = 0$** **II. $3y^2 - 19y + 28 = 0$**

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. $3x^2 - 5x - 12 = 0$** **II. $2y^2 + 15y + 25 = 0$**

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. $2x^2 + 5x + 2 = 0$** **II. $6y^2 + 69y + 198 = 0$**

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. $20x^2 + 93x + 99 = 0$** **II. $16y^2 - 25 = 0$**

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. $12x^2 - 4x - 5 = 0$** **II. $8y^2 - 4y - 4 = 0$**

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.

---

8. **I. $x^2 - 52x + 667 = 0$** **II. $y^2 - 60y + 899 = 0$**

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. $2x + 3y = 77$** **II. $3x + 5y = 124$**

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. $3x^2 - (6 + \sqrt{17})x + 2\sqrt{17} = 0$** **II. $10y^2 - (15 + 2\sqrt{17})y + 3\sqrt{17} = 0$**

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
A	A	E	A	A	D	E	B	D	E

Explanations:

1. **I.** $25x^2 - 90x + 72 = 0$
$\Rightarrow (5x - 6)(5y - 12) = 0$
$\Rightarrow x = \frac{6}{5}, \frac{12}{5}$

II. $y^2 + 26y + 168 = 0$
$\Rightarrow (y + 12)(y + 14) = 0$
$\Rightarrow y = -12, -14$

Hence, x > Y

Hence, option A is correct.

2. **I.** $20x^2 - 108x + 144 = 0$
$\Rightarrow 4(5x^2 - 27x + 36) = 0$
$\Rightarrow 5x^2 - 27x + 36 = 0$
$\Rightarrow (5x - 12)(x - 3) = 0$
$\Rightarrow x = \frac{12}{5}, 3$

II. $8y^2 + 18y + 4 = 0$
$\Rightarrow (8y + 2)(y + 2) = 0$
$\Rightarrow y = -\frac{1}{4}, -2$

Hence, x > Y
Hence, option A is correct.

3. **I.** $3x^2 - 8x - 16 = 0$

$\Rightarrow (3x + 4)(x - 4) = 0$

$\Rightarrow x = -\frac{4}{3}, 4$

II. $3y^2 - 19y + 28 = 0$

$\Rightarrow (3y - 7)(y - 4) = 0$

$\Rightarrow y = \frac{7}{3}, 4$

Hence, relationship between x and y cannot be determined.

Hence, option E is correct.

4. **I.** $3x^2 - 5x - 12 = 0$

$\Rightarrow (3x + 4)(x - 3) = 0$

$\Rightarrow x = -\frac{4}{3}, 3$

II. $2y^2 + 15y + 25 = 0$

$\Rightarrow (2y + 5)(y + 5) = 0$

$\Rightarrow y = -\frac{5}{2}, -5$

Hence, $x > y$

Hence, option A is correct.

5. **I.** $2x^2 + 5x + 2 = 0$

$\Rightarrow (2x + 1)(x + 2) = 0$

$\Rightarrow x = -\frac{1}{2}, -2$

II. $6y^2 + 69y + 198 = 0$

$\Rightarrow 3(2y^2 + 23y + 66) = 0$

$\Rightarrow 2y^2 + 23y + 66 = 0$

$\Rightarrow (2y + 11)(y + 6) = 0$

$\Rightarrow y = -\frac{11}{2}, -6$

Hence, $x > y$

Hence, option A is correct.

6. **I.** $20x^2 + 93x + 99 = 0$

$\Rightarrow 20x^2 + 60x + 33x + 99 = 0$

$\Rightarrow 20x(x + 3) + 33(x + 3) = 0$

$\Rightarrow (x + 3)(20x + 33) = 0$

$\therefore x = -3 \text{ or } x = -\frac{33}{20}$

II. $16y^2 - 25 = 0$

$\Rightarrow 16y^2 + 20y - 20y - 25 = 0$

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

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

$\therefore y = \frac{5}{4} \text{ or } y = -\frac{5}{4}$

So, we can say that $x < y$.
Hence, option D is correct.

7. **I.** $12x^2 - 4x - 5 = 0$

$\Rightarrow 12x^2 - 10x + 6x - 5 = 0$

$\Rightarrow 6x(2x + 1) - 5(2x + 1) = 0$

$\Rightarrow (6x - 5)(2x + 1) = 0$

$\therefore x = \frac{5}{6} \text{ or } \frac{-1}{2}$

II. $8y^2 - 4y - 4 = 0$

$\Rightarrow 8y^2 - 8y + 4y - 4 = 0$

$\Rightarrow 8y(y - 1) + 4(y - 1) = 0$

$\Rightarrow (8y + 4)(y - 1) = 0$

$\therefore y = \frac{-1}{2} \text{ or } y = 1$

So, here we can't say anything.
Hence, option E is correct.

8. **From I :**

$\Rightarrow x^2 - 52x + 667 = 0$

$\Rightarrow x^2 - 23x - 29x + 667 = 0$

$\Rightarrow x(x - 23) - 29(x - 23) = 0$

$\Rightarrow (x - 29\ \ (x - 23) = 0$

$\therefore x = 29, 23$

From II :

$\Rightarrow y^2 - 60y + 899 = 0$

$\Rightarrow y^2 - 29y - 31y + 899 = 0$

$\Rightarrow y(y - 29) - 31(y - 29) = 0$

$\Rightarrow (y - 31)(y - 29) = 0$

$\therefore y = 29, 31$

Now,

x y

29 = 29

29 < 31

23 < 29

23 < 31

Here, $x \leq y$.

Hence, option (B) is correct.

9. We have

$2x + 3y = 77$.....(i)

$3x + 5y = 124$.....(ii)

Multiplying eq. (i) by 3 and eq. (ii) by 2, we get

$6x + 9y = 231$ .....(iii)

$6x + 10y = 246$ .....(iv)

Subtracting eq. (iv) from (iii) we get

$y = 17$

putting value of $y = 17$ in (i), we get

$\Rightarrow 2x + 3 \times 17 = 77$

$\Rightarrow 2x = 51$

$\therefore x = 13$

Here, $x < y$.

Hence, option (D) is correct.

10. **I.** $3x^2 - (6 + \sqrt{17})x + 2\sqrt{17} = 0$

$\Rightarrow 3x^2 - 6x - \sqrt{17}x + 2\sqrt{17} = 0$

$\Rightarrow 3x(x - 2) - \sqrt{17}(x - 2) = 0$

$\Rightarrow (3x - \sqrt{17})(x - 2) = 0$

$\Rightarrow x = \frac{\sqrt{17}}{3}, 2$

II. $10y^2 - (15 + 2\sqrt{17})y + 3\sqrt{17} = 0$

$\Rightarrow 10y^2 - 15y - 2\sqrt{17}y + 3\sqrt{17} = 0$

$\Rightarrow 5y(2y - 3) - \sqrt{17}(2y - 3) = 0$

$\Rightarrow (5y - \sqrt{17})(2y - 3) = 0$

$\Rightarrow y = \frac{\sqrt{17}}{5}, \frac{3}{2}$

On comparing values of x and y

$\frac{\sqrt{17}}{3} > \frac{\sqrt{17}}{5}$

$\frac{\sqrt{17}}{3} < \frac{3}{2}$

$2 > \frac{\sqrt{17}}{5}$

$2 > \frac{3}{2}$

Hence, option (E) is correct.