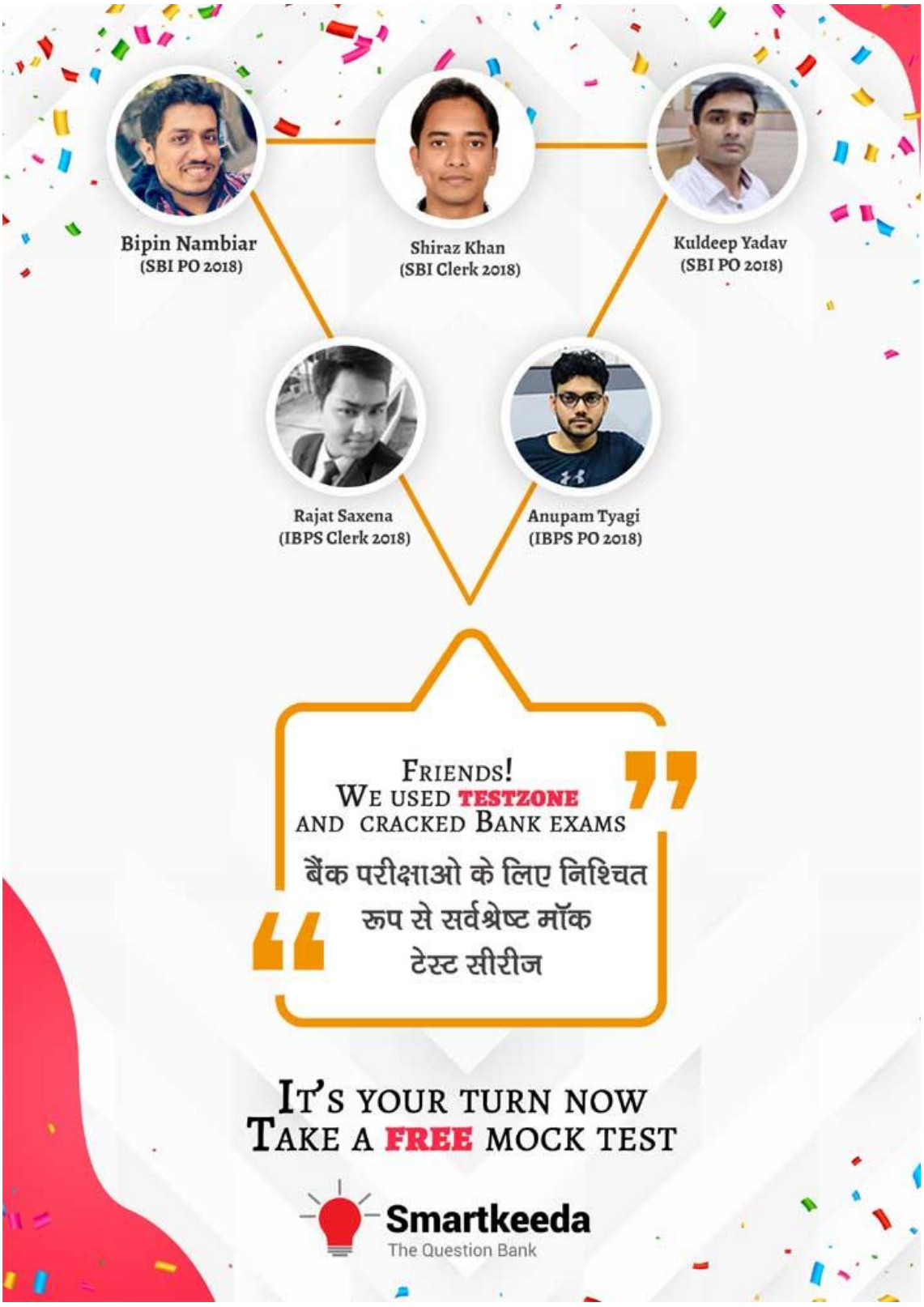
Bipin Nambiar
(SBI PO 2018)
Shiraz Khan
(SBI Clerk 2018)
Kuldeep Yadav
(SBI PO 2018)
Rajat Saxena
(IBPS Clerk 2018)
Anupam Tyagi
(IBPS PO 2018)
FRIENDS!
WE USED TESTZONE
AND CRACKED BANK EXAMS
बैंक परीक्षाओ के लिए निश्चित
रूप से सर्वश्रेष्ट मॉक
टेस्ट सीरीज
IT'S YOUR TURN NOW
TAKE A FREE MOCK TEST
Smartkeeda
The Question Bank

Quadratic Equation Question for IBPS Clerk Pre, IBPS RRB, LIC Assistant, RBI Assistant and SBI Clerk Pre Exams

Quadratic Equation Quiz 22

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. $6x^2 - 23\sqrt{3}x + 60 = 0$**

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

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

2. **I. $x^3 - 14 - 1714 = 0$**

II. $3y^2 - 63 - 300 = 0$

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. $2x^2 + 3x - 35 = 0$**

II. $4y^2 + 10y - 104 = 0$

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. $x^2 - 0.5x - 39 = 0$**

II. $y^2 - 15.5y + 60 = 0$

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. $35x^2 + 13x - 90 = 0$**

II. $7y^2 + 24y + 20 = 0$

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. $x^2 + 8\sqrt{3}x + 45 = 0$**

II. $3y^2 + 27y + 60 = 0$

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. $x^2 - 16x + 63 = 0$**

II. $y^2 - 20y + 100 = 1$

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. $15x^2 + 133x + 220 = 0$**

II. $3y^2 + 19y + 26 = 0$

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. $x^2 + 12x + 35 = 0$**

II. $y^2 + 15y + 56 = 0$

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. $x^3 - 16 - 200 = 0$**

II. $y^4 - 625 = 0$

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 answer:

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

Explanation:

1. **I.** $6x^2 - 23\sqrt{3}x + 60 = 0$

$6x^2 - 8\sqrt{3}x - 15\sqrt{3}x + 60 = 0$

$2x(3x - 4\sqrt{3}) - 5\sqrt{3}(3x - 4\sqrt{3}) = 0$

$(2x - 5\sqrt{3})(3x - 4\sqrt{3}) = 0$

$x = 2.5\sqrt{3}, 1.33\sqrt{3}$

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

$2y^2 + 5\sqrt{3}y - 2\sqrt{3}y - 15 = 0$

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

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

$y = \sqrt{3}, -2.5\sqrt{3}$

Therefore, for any value of x and any value of y

$x > y$

Hence, option A is correct.

2. **I.** $x^3 - 14 - 1714 = 0$

$x^3 = 1728$

$x = 12$

II. $3y^2 - 63 - 300 = 0$

$3y^2 = 363$

$y^2 = 121$

$y = \pm 11$

Therefore, $x > y$

Hence, option A is correct.

3. **I.** $2x^2 + 3x - 35 = 0$

$2x^2 + 10x - 7x - 35 = 0$

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

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

$x = 3.5, -5$

II. $4y^2 + 10y - 104 = 0$

$4y^2 + 26y - 16y - 104 = 0$

$2y(2y + 13) - 8(2y + 13) = 0$

$(2y - 8)(2y + 13) = 0$

$y = 4, -6.5$

For $x = 3.5$ and $y = 4$

$x < y$

For $x = 3.5$ and $y = -6.5$

$x > y$

Therefore, relationship can't be established

Hence, option E is correct.

4. **I.** $x^2 - 0.5x - 39 = 0$

$x^2 + 6x - 6.5x - 39 = 0$

$x(x + 6) - 6.5(x + 6) = 0$

$(x - 6.5)(x + 6) = 0$

$x = 6.5, -6$

II. $y^2 - 15.5y + 60 = 0$

$y^2 - 8y - 7.5y + 60 = 0$

$y(y - 8) - 7.5(y - 8) = 0$

$(y - 8)(y - 7.5) = 0$

$y = 7.5, 8$

Therefore, for any value of x and any value of y

$x < y$

Hence, option D is correct.

5. **I.** $35x^2 + 13x - 90 = 0$

$35x^2 + 63x - 50x - 90 = 0$

$7x(5x + 9) - 10(5x + 9) = 0$

$(7x - 10)(5x + 9) = 0$

$x = \frac{10}{7}, -\frac{9}{5}$

II. $7y^2 + 24y + 20 = 0$

$7y^2 + 14y + 10y + 20 = 0$

$7y(y + 2) + 10(y + 2) = 0$

$(y + 2)(7y + 10) = 0$

$y = -2, -\frac{10}{7}$

For $x = -\frac{9}{5}$, and $y = -\frac{10}{7}$ $x < y$ but for $x = -\frac{9}{5}$ and $y = -2$, $x > y$

Therefore, relationship can't be determined

Hence, option E is correct.

6. **I.** $x^2 + 8\sqrt{3}x + 45 = 0$

$x^2 + 5\sqrt{3}x + 3\sqrt{3}x + 45 = 0$

$x(x + 5\sqrt{3}) + 3\sqrt{3}(x + 5\sqrt{3}) = 0$

$(x + 3\sqrt{3})(x + 5\sqrt{3}) = 0$

$x = -3\sqrt{3}, -5\sqrt{3}$

II. $3y^2 + 27y + 60 = 0$

$3y^2 + 12y + 15y + 60 = 0$

$3y(y + 4) + 15(y + 4) = 0$

$(y + 4)(3y + 15) = 0$

$y = -4, -5$

For $x = -3\sqrt{3}$,or $-5\sqrt{3}$ and $y = -4$,or -5

$x < y$

Hence, option D is correct.

7. **I.** $x^2 - 16x + 63 = 0$

$x^2 - 9x - 7x + 63 = 0$

$x(x - 9) - 7(x - 9) = 0$

$(x - 9)(x - 7) = 0$

$x = 7, 9$

II. $y^2 - 20y + 100 - 1 = 0$

$y^2 - 11y - 9y + 99 = 0$

$y(y - 11) - 9(y - 11) = 0$

$(y - 11)(y - 9) = 0$

$y = 11, 9$

For x = 7, or 9 and y = 11

$x < y$

For x = 9, and y = 9

$x = y$

Therefore, $x \leq y$

Hence, option B is correct.

8. **I.** $15x^2 + 133x + 220 = 0$

$15x^2 + 33x + 100x + 220 = 0$

$3x(5x + 11) + 20(5x + 11) = 0$

$(3x + 20)(5x + 11) = 0$

$x = -\frac{20}{3}, -\frac{11}{5} = -6.67, -2.2$

II. $3y^2 + 19y + 26 = 0$

$3y^2 + 13y + 6y + 26 = 0$

$y(3y + 13) + 2(3y + 13) = 0$

$(3y + 13)(y + 2) = 0$

$y = -\frac{13}{3}, -2 = -4.33, -2$

For $x = -6.67$ and $y = -4.33$

$x < y$

For $x = -2.2$ and $y = -4.33$

$x > y$

Therefore, relationship can't be established

Hence, option E is correct.

9. **I.** $x^2 + 12x + 35 = 0$

$x^2 + 7x + 5x + 35 = 0$

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

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

$x = -5, -7$

II. $y^2 + 15y + 56 = 0$

$y^2 + 7y + 8y + 56 = 0$

$y(y + 7) + 8(y + 7) = 0$

$(y + 7)(y + 8) = 0$

y = – 7, – 8

For x = – 5, or – 7 and y = – 8

x > y

For x = – 7, and y = – 7,

x = y

Therefore, x ≥ y

Hence, option C is correct.

10. **I.** $x^3 - 216 = 0$

$x^3 = 216$

x = 6

II. $y^4 - 625 = 0$

y = + 5, – 5

Therefore, x > y

Hence, option A is correct.