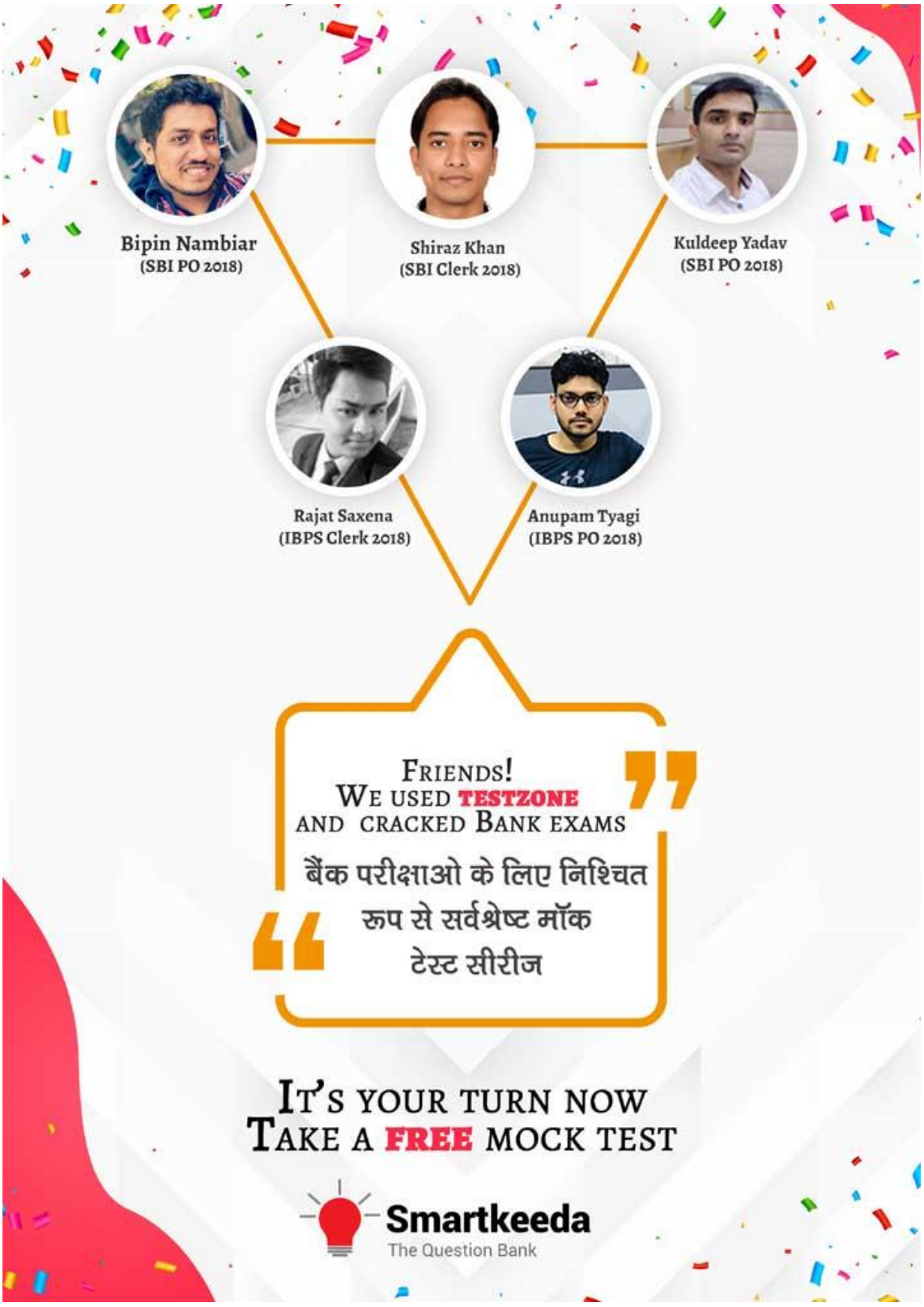
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The Question Bank

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

Quadratic Equation Quiz 23

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. $x^2 - 9x + 18 = 0$**

II. $y^2 - 11y + 18 = 0$

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. $x = 15^2 - 6^3$**

II. $y = 12^2 - 11^2 - 14$

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. $x^2 - 14x + 48 = 0$**

II. $y^2 - 9y + 20 = 0$

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

4. **I. 6x + y = 25**

II. 2x + 3y = 27

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. $4x + 3y = 51$**

II. $x + 4y = 29$

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. $(x^{9/4} \div 9)^2 = 27 \div x^{5/2}$**

II. $y^{1/4} \times y^{3/4} \times 2401 = 49 \times y^3$

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

7. **I. $x^2 - (729)^{1/6} x - 4 = 0$**

II. $y^2 - 8y + 16 = 0$

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

8. **I. $x^3 - 9x^2 + 8x = 0$**

II. $y^3 + 7y^2 + 12y = 0$

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. $2x^4 - 36x^2 + 16^2 = 0$**

II. $3y^4 - 75y^2 + 43^2 = 0$

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

10. **I. $x^2 + (\sqrt{7x})^2 + 12 = 0$**

II. $y^2 + 3y - (\sqrt{4})^2 = 0$

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

Correct answer:

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

Explanation:

1. According to the given equations:

I. $x^2 - 9x + 18 = 0$

$x^2 - 3x - 6x + 18 = 0$

$x(x - 3) - 6(x - 3) = 0$

$(x - 3)(x - 6) = 0$

$x = 3, 6$

II. $y^2 - 11y + 18 = 0$

$y^2 - 9y - 2y + 18 = 0$

$y(y - 9) - 2(y - 9) = 0$

$(y - 2)(y - 9) = 0$

$y = 2, 9$

After comparison of both equations, the conclusion is x = y or no relation is obtained.

Hence, option E is correct.

2. According to the given equations:

I. $x = 15^2 - 6^3$

$x = 225 - 216$

$x = 9$

II. $y = 12^2 - 11^2 - 14$

$y = 144 - 121 - 14$

$y = 9$

After comparison of both equations, the conclusion is x=y or no relation is obtained

Hence, option E is correct.

3. According to the given equations:

I. $x^2 - 14x + 48 = 0$

$x^2 - 8x - 6x + 48 = 0$

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

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

$x = 8, 6$

II. $y^2 - 9y + 20 = 0$

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

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

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

$y = 4, 5$

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

Hence, option A is correct.

4. According to the given equations:

I. $6x + y = 25$

$y = 25 - 6x$

II. $2x + 3y = 27$

$2x + 3(25 - 6x) = 27$

$2x + 75 - 18x = 27$

$75 - 27 = 18x - 2x$

$48 = 16x$

$x = 3$

$y = 25 - 6x$

$y = 25 - 18 = 7$

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

Hence, option D is correct.

5. According to the given equations:

I. $4x + 3y = 51$

$3y = 51 - 4x$

$y = \frac{51 - 4x}{3}$

II. $x + 4y = 29$

$x + 4 \times \frac{51 - 4x}{3} = 29$

$3x + 204 - 16x = 87$

$204 - 87 = 16x - 3x$

$13x = 117$

$x = 9$

$y = \frac{51 - 4x}{3} = \frac{51 - 36}{3} = \frac{15}{3} = 5$

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

Hence, option A is correct.

6. According to the given equations:

I. $(x^{9/4} \div 9)^2 = 27 \div x^{5/2}$

$\frac{x^{9/2}}{81} = \frac{27}{x^{5/2}}$

$x^{9/2} \times x^{5/2} = 81 \times 27$

$x^7 = 3^4 \times 3^3$

$x = 3$

II. $y^{1/4} \times y^{3/4} \times 2401 = 49 \times y$

$y \times 2401 = 49 \times y^3$

$\frac{2401}{49} = y^2$

$y = \pm 7$

After comparison of both equations, the conclusion

Option E is correct.

7. According to the given equations :

I. $x^2 - (729)^{1/6} x - 4 = 0$

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

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

$x(x - 4) + 1(x - 4) = 0$

$x = -1, 4$

II. $y^2 - 8y + 16 = 0$

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

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

$y = 4, 4$

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

Hence, option B is correct.

8. According to the given equations :

I. $x^3 - 9x^2 + 8x = 0$

$$\frac{x^3 - 9x^2 + 8x}{x} = \frac{0}{x}$$

$x^2 - 9x + 8 = 0$

$x^2 - 8x - x + 8 = 0$

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

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

$x = 0, 1, 8$

II. $y^3 + 7y^2 + 12y = 0$

$$\frac{y^3 + 7y^2 + 12y}{y} = \frac{0}{y}$$

$y^2 + 7y + 12 = 0$

$y^2 + 4y + 3y + 12 = 0$

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

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

$y = 0, -3, -4$

Therefore, $x \geq y$

Hence, option C is correct.

9. According to the given equations :

I. $2x^4 - 36x^2 + 162 = 0$

$x^4 - 18x^2 + 81 = 0$

$x^4 - 9x^2 - 9x^2 + 81 = 0$

$x^2(x^2 - 9) - 9(x^2 - 9) = 0$

$(x^2 - 9)(x^2 - 9) = 0$

$x^2 = 9 ; x = \pm 3$

II. $3y^4 - 75y^2 + 432 = 0$

$y^4 - 25y^2 + 144 = 0$

$y^4 - 16y^2 - 9y^2 + 144 = 0$

$y^2(y^2 - 16) - 9(y^2 - 16) = 0$

$(y^2 - 9)(y^2 - 16) = 0$

$y^2 = 9; y^2 = 16$

$y = \pm 3, y = \pm 4$

After comparison of both equations, the conclusion is, x = y or no relation is obtained

Hence, option E is correct.

10. According to the given equations :

I. $x^2 + (\sqrt{7x})^2 + 12 = 0$

$x^2 + 7x + 12 = 0$

$x^2 + 3x + 4x + 12 = 0$

$x(x + 3) + 4(x + 3) = 0$

$(x + 4)(x + 3) = 0$

$x = -3, -4$

II. $y^2 + 3y - (\sqrt{4})^2 = 0$

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

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

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

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

$y = 1, -4$

After comparison of both equations, the conclusion is, x = y or no relation is obtained

Hence, option E is correct.