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

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.** $x^2 - 19x + 88 = 0$
  II. $y^2 - 12y + 35 = 0$

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.** $x^2 - 11x + 24 = 0$

  II. $y^2 - 16y + 63 = 0$

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

3. **I.** $2x^2 - 24x + 70 = 0$
  II. $y^2 - 20y + 91 = 0$

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.** $x^3 = 7^3 - 127$
  II. $y = 18^2 - 315$

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.** $3x + 5y = 76$
  II. $x + 3y = 36$

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.** $2x^2 - 12x + 16 = 0$
  II. $y^2 - 7y + 12 = 0$

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

II. $y^2 - 2y - 15 = 0$

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

8.   **I.** $2x^2 - 10x + 12 = 0$
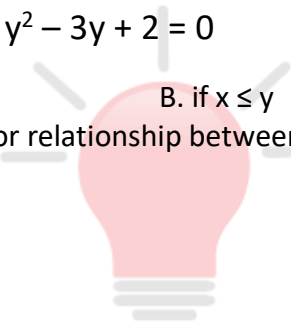   **II.** $2y^2 - 19y + 35 = 0$

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.** $x^2 - 6x - 16 = 0$
          II. $y^2 + 5y + 6 = 0$

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.** $x^2 - x - 20 = 0$
          II. $y^2 - 3y + 2 = 0$

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 Answers:

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

Explanations:

1. According to the given equations :

I. $x^2 - 19x + 88 = 0$
$x^2 - 11x - 8x + 88 = 0$
$x(x - 11) - 8(x - 11) = 0$
$(x - 8)(x - 11) = 0$
$x = 8, 11$

II. $y^2 - 12y + 35 = 0$
$y^2 - 7y - 5y + 35 = 0$
$y(y - 7) - 5(y - 7) = 0$
$(y - 7)(y - 5) = 0$
$y = 7, 5$

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

Hence, option A is correct.

2. According to the given equations :

I. $x^2 - 11x + 24 = 0$
$x^2 - 3x - 8x + 24 = 0$
$x(x - 3) - 8(x - 3) = 0$
$(x - 3)(x - 8) = 0$
$x = 3, 8$

II. $y^2 - 16y + 63 = 0$
$y^2 - 7y - 9y + 63 = 0$
$y(y - 7) - 9(y - 7) = 0$
$(y - 7)(y - 9) = 0$
$y = 7, 9$

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

Hence, option E is correct.

3. According to the given equations :

I. $2x^2 - 24x + 70 = 0$

$$\frac{2x^2 - 24x + 70}{2} = 0$$

$x^2 - 12x + 35 = 0$

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

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

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

$x = 5, 7$

II. $y^2 - 20y + 91 = 0$

$y^2 - 7y - 13y + 91 = 0$

$y(y - 7) - 13(y - 7) = 0$

$(y - 7)(y - 13) = 0$

$y = 7, 13$

While comparing the root values of x and y, we find that one root value of y is equal to x's and another one is greater than x's root values. Hence, the relation between x and y will be x ≤ y.

Hence, option B is correct.

4. According to the given equations :

I. $x^3 = 7^3 - 127$

$x^3 = 343 - 127$

$x^3 = 216$

$x = 6$

II. $y = 18^2 - 315$

$y = 324 - 315$

$y = 9$

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

Hence, option D is correct.

5.   According to the given equations :

I. 3x + 5y = 76

Applying x's value from equation (ii), we get

3(36 – 3y) + 5y = 76
108 – 9y + 5y = 76
108 – 76 = 4y
32 = 4y ; y = 8

II. x + 3y = 36
x = 36 – 3y
x = 36 – 3 × 8
x = 36 – 24 = 12

While comparing the root values of x and y we find that x > y.

Hence, option A is correct.

6.   **I.** $2x^2 - 12x + 16 = 0$
$\Rightarrow 2x^2 - 4x - 8x + 16 = 0$
$\Rightarrow 2x\,(x - 2) - 8\,(x - 2) = 0$
$\Rightarrow (2x - 8)\,(x - 2) = 0$
x = 4, 2

II. $y^2 - 7y + 12 = 0$
$\Rightarrow y^2 - 4y - 3y + 12 = 0$
$\Rightarrow y\,(y - 4) - 3\,(y - 4) = 0$
$\Rightarrow (y - 3)\,(y - 4) = 0$
y = 4, 3

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

Hence, option E is correct.

7. **I.** $x^2 + 7x + 12 = 0$

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

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

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

$x = -3, -4$

II. $y^2 - 2y - 15 = 0$

$\Rightarrow y^2 - 5y + 3y - 15 = 0$

$\Rightarrow y (y - 5) + 3 (y - 5) = 0$

$\Rightarrow (y + 3) (y - 5) = 0$

$y = -3, 5$

While comparing the root values of x and y, we find that one root value of y is equal to x and other one is less than y's root values. Hence, $x \leq y$.

Hence, option B is correct.

8. **I.** $2x^2 - 10x + 12 = 0$

$\Rightarrow 2x^2 - 6x - 4x + 12 = 0$

$\Rightarrow 2x (x - 3) - 4 (x - 3) = 0$

$\Rightarrow (2x - 4) (x - 3) = 0$

$x = 2, 3$

II. $2y^2 - 19y + 35 = 0$

$\Rightarrow 2y^2 - 14y - 5y + 35 = 0$

$\Rightarrow 2y (y - 7) - 5 (y - 7) = 0$

$\Rightarrow (2y - 5) (y - 7) = 0$

$y = 2.5, 7$

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

Hence, option E is correct.

9. **I.** $x^2 - 6x - 16 = 0$

$\Rightarrow x^2 + 2x - 8x - 16 = 0$

$\Rightarrow x (x + 2) - 8 (x + 2) = 0$

$\Rightarrow (x - 8) (x + 2) = 0$

x = 8, − 2

II. $y^2 + 5y + 6 = 0$

$\Rightarrow y^2 + 3y + 2y + 6 = 0$

$\Rightarrow y (y + 3) + 2 (y + 3) = 0$

$\Rightarrow (y + 3) (y + 2) = 0$

y = − 3, − 2

While comparing the root values of x and y, we find that one root value of x is equal to the value of y's and another one is greater than y's root values. Hence, x.≥ y.

Hence, option C is correct.

10. **I.** $x^2 - x - 20 = 0$

$\Rightarrow x^2 - 5x + 4x - 20 = 0$

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

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

x = − 4, 5

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

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

$\Rightarrow y (y - 2) - 1 (y - 2) = 0$

$\Rightarrow (y - 1) (y - 2) = 0$

y = 1, 2

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

Hence, option E is correct.