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# Quadratic Equation Questions for Bank Exams (SBI Clerk, IBPS Clerk, SBI PO Pre, IBPS PO Pre, IBPS SO Pre & RRB Scale I Pre)

## Quadratic Equation Quiz 8

Directions: In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer.

- I.  $11x + 64/x = 54$   
II.  $12y^2 + 40y + 17 = 0$

A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established
- I.  $84x^2 + 115x + 26 = 0$   
II.  $27y^2 + 36y - 15 = 0$

A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established
- I.  $24x^2 + 25x - 11 = 0$   
II.  $45y^2 + 36y + 7 = 0$

A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established
- I.  $x^2 + 9x - 52 = 0$   
II.  $12y^2 + 16y + 4 = 0$

A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established
- I.  $8x^2 + 29x + 26 = 0$   
II.  $11y^2 + 39y + 18 = 0$

A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established
- I.  $36x^2 - 196x - 11 = 0$   
II.  $6y^2 - 12y - 378 = 0$

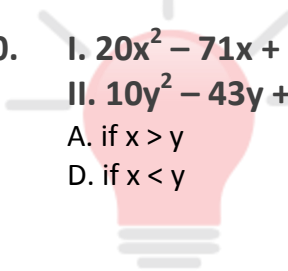
A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established

7. I.  $x^2 + 31x + 238 = 0$   
II.  $y^2 + 47y + 552 = 0$   
A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established

8. I.  $x^2 - 4(\sqrt{2} + \sqrt{5})x + 16\sqrt{10} = 0$   
II.  $y^2 - 5(\sqrt{3} + 2\sqrt{2})y + 50\sqrt{6} = 0$   
A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established

9. I.  $x^2 - x - 210 = 0$   
II.  $y^2 - 31y + 240 = 0$   
A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
D. if  $x < y$                       E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established

10. I.  $20x^2 - 71x + 63 = 0$   
II.  $10y^2 - 43y + 45 = 0$   
A. if  $x > y$                       B. if  $x \leq y$                       C. if  $x \geq y$   
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	E	E	E	E	A	E	B	B

**Explanations:**

1.

**Statement I**

$$11x + 64/x = 54$$

$$\Rightarrow 11x^2 - 54x + 64 = 0$$

$$11x^2 - 22x - 32x + 64 = 0$$

$$11x(x - 2) - 32(x - 2) = 0$$

$$x = 2 \text{ or } x = \frac{32}{11}$$

**Statement II**

$$12y^2 + 40y + 17 = 0$$

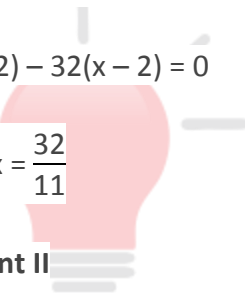
$$12y^2 + 6y + 34y + 17 = 0$$

$$6y(2y + 1) + 17(2y + 1) = 0$$

$$y = -\frac{1}{2} \text{ or } y = -\frac{17}{6}$$

$$\therefore x > y$$

Hence, option A is correct.



2.

**Statement I**

$$84x^2 + 115x + 26 = 0$$

$$84x^2 + 91x + 24x + 26 = 0$$

$$7x(12x + 13) + 2(12x + 13) = 0$$

$$\Rightarrow x = -\frac{2}{7}, \text{ or } -\frac{13}{12}$$

**Statement II**

$$27y^2 + 36y - 15 = 0$$

$$27y^2 + 45y - 9y - 15 = 0$$

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

$$y = \frac{1}{3}, -\frac{5}{3}$$

$\therefore$  There is no relationship between  $x$  and  $y$ .

Hence, option E is correct.

3.

**Statement I**

$$24x^2 + 25x - 11 = 0$$

$$24x^2 - 8x + 33x - 11 = 0$$

$$8x(3x - 1) + 11(3x - 1) = 0$$

$$\Rightarrow x = \frac{1}{3}, -\frac{11}{8}$$

**Statement II**

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$$45y^2 + 36y + 7 = 0$$

$$45y^2 + 15y + 21y + 7 = 0$$

$$15y(3y + 1) + 7(3y + 1) = 0$$

$$y = -\frac{1}{3}, -\frac{7}{15}$$

∴ There is no relationship between x and y.

Hence, option E is correct.

**4.**

**Statement I**

$$x^2 + 9x - 52 = 0$$

$$x^2 + 13x - 4x - 52 = 0$$

$$x(x + 13) - 4(x + 13) = 0$$

$$x = 4, -13$$

**Statement II**

$$12y^2 + 16y + 4 = 0$$

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

$$12y(y + 1) + 4(y + 1) = 0$$

$$y = -1, -\frac{1}{3}$$

∴ There is no relationship between x and y.

Hence, option E is correct.



5.

**Statement I**

$$8x^2 + 29x + 26 = 0$$

$$8x^2 + 16x + 13x + 26 = 0$$

$$8x(x + 2) + 13(x + 2) = 0$$

$$x = -2, -\frac{13}{8}$$

**Statement II**

$$11y^2 + 39y + 18 = 0$$

$$11y^2 + 33y + 6y + 18 = 0$$

$$11y(y + 3) + 6(y + 3) = 0$$

$$y = -3, -\frac{6}{11}$$

∴ There is no relationship between x and y.

Hence, option E is correct.

6.

I.  $36x^2 - 196x - 11 = 0$

$$\Rightarrow 36x^2 + 2x - 198x - 11 = 0$$

$$\Rightarrow 2x(18x + 1) - 11(18x + 1) = 0$$

$$\Rightarrow (2x - 11)(18x + 1) = 0$$

$$\Rightarrow x = \frac{11}{2}, -\frac{1}{18}$$

II.  $6y^2 - 12y - 378 = 0$



$$\Rightarrow 6y^2 - 54y + 42y - 378 = 0$$

$$\Rightarrow 6y(y - 9) + 42(y - 9) = 0$$

$$\Rightarrow (6y + 42)(y - 9) = 0$$

$$\Rightarrow y = -7, 9$$

Hence, relationship between x and y cannot be determined.

Hence, option E is correct.

**7.**

Correct Option: A

$$\text{I. } x^2 + 31x + 238 = 0$$

$$\Rightarrow x^2 + 14x + 17x + 238 = 0$$

$$\Rightarrow x(x + 14) + 17(x + 14) = 0$$

$$\Rightarrow (x + 17)(x + 14) = 0$$

$$\therefore x = -17, -14$$

$$\text{II. } y^2 + 47y + 552 = 0$$

$$\Rightarrow y^2 + 24y + 23y + 552 = 0$$

$$\Rightarrow y(y + 24) + 23(y + 24) = 0$$

$$\Rightarrow (y + 23)(y + 24) = 0$$

$$\therefore y = -23, -24$$

on comparing the value of x and y

x	y
-14	> -23
-14	> -24
-17	> -23
-17	> -24

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Here,  $x > y$

Hence, option A is correct.

**8.**

$$\text{I. } x^2 - 4\sqrt{2}x - 4\sqrt{5}x + 16\sqrt{10} = 0$$

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

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

$$\therefore x = 4\sqrt{2}, 4\sqrt{5}$$

$$\text{II. } y^2 - 5(\sqrt{3} + 2\sqrt{2})y + 50\sqrt{6} = 0$$

$$\Rightarrow y^2 - 5\sqrt{3}y - 10\sqrt{2}y + 50\sqrt{6} = 0$$

$$\Rightarrow y(y - 5\sqrt{3}) - 10\sqrt{2}(y - 5\sqrt{3}) = 0$$

$$\Rightarrow (y - 10\sqrt{2})(y - 5\sqrt{3}) = 0$$

$$\therefore y = 10\sqrt{2}, 5\sqrt{3}$$

on comparing the root value of x and y

x	y
$4\sqrt{2} < 10\sqrt{2}$	
$4\sqrt{2} < 5\sqrt{3}$	
$4\sqrt{5} < 10\sqrt{2}$	
$4\sqrt{5} > 5\sqrt{3}$	

Here, Either  $x = y$  or relation can't be established.

Hence, option E is correct.

**9.**

$$\text{I. } x^2 - x - 210 = 0$$

$$\Rightarrow x^2 - 15x + 14x - 210 = 0$$

$$\Rightarrow x(x - 15) + 14(x - 15) = 0$$

$$\Rightarrow (x + 14)(x - 15) = 0$$

$$\therefore x = 15, -14$$

$$\text{II. } y^2 - 31y + 240 = 0$$

$$\Rightarrow y^2 - 15y - 16y + 240 = 0$$

$$\Rightarrow y(y - 15) - 16(y - 15) = 0$$

$$\Rightarrow (y - 16)(y - 15) = 0$$

$$\therefore y = 16, 15$$

on comparing the value of x and y

x	y
-14	< 15
-14	< 16
15	= 15
15	< 16

Here,  $x \leq y$

Hence, option B is correct.

**10.**

$$\text{I. } 20x^2 - 71x + 63 = 0$$

$$\Rightarrow 20x^2 - 36x - 35x + 63 = 0$$

$$\Rightarrow 4x(5x - 9) - 7(5x - 9) = 0$$

$$\Rightarrow (4x - 7)(5x - 9) = 0$$

$$\therefore x = \frac{7}{4}, \frac{9}{5}$$

$$\text{II. } 10y^2 - 43y + 45 = 0$$

$$\Rightarrow 10y^2 - 25y - 18y + 45 = 0$$

$$\Rightarrow 5y(2y - 5) - 9(2y - 5) = 0$$

$$\Rightarrow (5y - 9)(2y - 5) = 0$$

$$\therefore y = \frac{9}{5}, \frac{5}{2}$$

on comparing the value of x and y

$$\begin{array}{l} x \quad y \\ \frac{7}{4} < \frac{9}{5} \\ \frac{7}{4} < \frac{5}{2} \\ \frac{9}{5} = \frac{9}{5} \\ \frac{9}{5} > \frac{5}{2} \end{array}$$



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Here,  $x \leq y$

Hence, option B is correct.



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