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

## Quadratic Equation Quiz 12

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.  $2x^2 + 51x + 220 = 0$

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

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

2. I.  $x^2 + 16x + 63 = 0$

II.  $y^2 + 13y + 42 = 0$

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

3. I.  $2x^2 + 3x - 20 = 0$

II.  $2y^2 + 15y + 28 = 0$

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

4. I.  $x^2 - 11x + 30 = 0$

II.  $y^2 - 9.5y + 22.5 = 0$

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

5. I.  $4x^2 - 33x + 63 = 0$

II.  $5y^2 - 37y + 54 = 0$

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

6. I.  $x^2 - 13.5x + 38 = 0$

II.  $y^2 - 1.5y - 10 = 0$

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.  $x^2 + 5x - 84 = 0$

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

A. if  $x > y$

B. if  $x \leq y$

C. if  $x \geq y$

D. if  $x < y$

E. if  $x \leq y$  or no relationship can be established between  $x$  and  $y$ .

8. I.  $2x^2 + 13\sqrt{3}x + 60 = 0$

II.  $y^2 + 7\sqrt{3}y + 36 = 0$

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.  $x^2 + 11x + 30 = 0$

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

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.  $4x^2 - 216 = 0$

II.  $5y^3 - 810\sqrt{6} = 0$

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

**Correct Answers:**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
D	B	E	C	E	C	B	E	B	B

**Explanations:**

1. I.  $2x^2 + 51x + 220 = 0$   
 $2x^2 + 40x + 11x + 220 = 0$   
 $2x(x + 20) + 11(2x + 20) = 0$   
 $(2x + 11)(x + 20) = 0$   
 $x = -5.5, -20$

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

For  $x = -5.5$  or  $-20$  and  $y = -3$  or  $4$

$x < y$

Hence, option D is correct.



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**2.** I.  $x^2 + 16x + 63 = 0$   
 $x^2 + 9x + 7x + 63 = 0$   
 $x(x + 9) + 7(x + 9) = 0$   
 $(x + 7)(x + 9) = 0$   
 $x = -7, -9$

II.  $y^2 + 13y + 42 = 0$   
 $y^2 + 7y + 6y + 42 = 0$   
 $y(y + 7) + 6(y + 7) = 0$   
 $(y + 7)(y + 6) = 0$   
 $y = -7, -6$

For  $x = -7$ , and  $y = -7$ ,  $x = y$

For  $x = -7$ , or  $-9$  and  $y = -6$   $x < y$

For  $x = -9$  and  $y = -6$   $x < y$

Therefore,  $x \leq y$

Hence, option B is correct.

**3.** I.  $2x^2 + 3x - 20 = 0$   
 $2x^2 + 8x - 5x - 20 = 0$   
 $2x(x + 4) - 5(x + 4) = 0$   
 $(2x - 5)(x + 4) = 0$   
 $x = 2.5, -4$

II.  $2y^2 + 15y + 28 = 0$   
 $2y^2 + 8y + 7y + 28 = 0$   
 $2y(y + 4) + 7(y + 4) = 0$   
 $(2y + 7)(y + 4) = 0$   
 $y = -3.5, -4$

For  $x = -4$  and  $y = -4$ ,  $x = y$

For  $x = 2.5$ , and  $y = -3.5$  or  $-4$

$x > y$

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

$x < y$

Therefore, relationship can't be established

Hence, option E is correct.

4. I.  $x^2 - 11x + 30 = 0$   
 $x^2 - 5x - 6x + 30 = 0$   
 $x(x - 5) - 6(x - 5) = 0$   
 $(x - 6)(x - 5) = 0$   
 $x = 6, 5$

II.  $y^2 - 9.5y + 22.5 = 0$   
 $y^2 - 4.5y - 5y + 22.5 = 0$   
 $y(y - 4.5) - 5(y - 4.5) = 0$   
 $(y - 4.5)(y - 5) = 0$   
 $y = 4.5, 5$

For  $x = 5$  and  $y = 5$ ,  $x = y$   
 For  $x = 6$ , and  $y = 4.5$  or  $5$

$x > y$

Therefore,  $x \geq y$

Hence, option C is correct.

5. I.  $4x^2 - 33x + 63 = 0$   
 $4x^2 - 12x - 21x + 63 = 0$   
 $4x(x - 3) - 21(x - 3) = 0$   
 $(x - 3)(4x - 21) = 0$   
 $x = 3, 5.25$

II.  $5y^2 - 37y + 54 = 0$   
 $5y^2 - 10y - 27y + 54 = 0$   
 $5y(y - 2) - 27(y - 2) = 0$   
 $(5y - 27)(y - 2) = 0$   
 $y = 5.4, 2$

For  $x = 3$  and  $y = 5.4$ ,  $x < y$

For  $x = 3$ , and  $y = 2$ ,  $x > y$

Therefore, Relation can't be established

Hence, option E is correct.

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6. I.  $x^2 - 13.5x + 38 = 0$

$$x^2 - 9.5x - 4x + 38 = 0$$

$$x(x - 9.5) - 4(x - 9.5) = 0$$

$$(x - 9.5)(x - 4) = 0$$

$$x = 9.5, 4$$

II.  $y^2 - 1.5y - 10 = 0$

$$y^2 - 4y + 2.5y - 10 = 0$$

$$y(y - 4) + 2.5(y - 4) = 0$$

$$(y - 4)(y + 2.5) = 0$$

$$y = 4, -2.5$$

For  $x = 9.5$   $x > y$

For  $x = 4$ , and  $y = 4$ ,  $x = y$

Therefore,  $x \geq y$

Hence, option C is correct.

7. I.  $x^2 + 5x - 84 = 0$

$$x^2 + 12x - 7x - 84 = 0$$

$$x(x + 12) - 7(x + 12) = 0$$

$$(x + 12)(x - 7) = 0$$

$$x = 7, -12$$

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

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

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

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

$$y = 7, 9$$

For,  $x = 7$  and  $y = 7$

$$x = y$$

But for  $x = 7$  and  $y = 9$

$$x < y$$

$x = -12$  and  $y = 9$

$$x < y$$

Therefore,  $x \leq y$

Hence, option B is correct.

8. I.  $2x^2 + 13\sqrt{3}x + 60 = 0$   
 $2x^2 + 5\sqrt{3}x + 8\sqrt{3}x + 60 = 0$   
 $x(2x + 5\sqrt{3}) + 4\sqrt{3}(2x + 5\sqrt{3}) = 0$   
 $(2x + 5\sqrt{3})(x + 4\sqrt{3}) = 0$   
 $x = -2.5\sqrt{3}, -4\sqrt{3}$

II.  $y^2 + 7\sqrt{3}y + 36 = 0$   
 $y^2 + 4\sqrt{3}y + 3\sqrt{3}y + 36 = 0$   
 $y(y + 4\sqrt{3}) + 3\sqrt{3}(y + 4\sqrt{3}) = 0$   
 $(y + 4\sqrt{3})(y + 3\sqrt{3}) = 0$   
 $y = -4\sqrt{3}, -3\sqrt{3}$

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

$x = -2.5\sqrt{3}$  and  $y = -4\sqrt{3}, -3\sqrt{3}$   $x > y$

For  $x = -4\sqrt{3}$  and  $y = -3\sqrt{3}$   $x < y$

Therefore, the relation between  $x$  and  $y$  can't be established. Hence, option E is correct.

Hence, option A is correct.

9. I.  $x^2 + 11x + 30 = 0$   
 $x^2 + 5x + 6x + 30 = 0$   
 $x(x + 5) + 6(x + 5) = 0$   
 $(x + 6)(x + 5) = 0$   
 $x = -6, -5$

II.  $y^2 + y - 20 = 0$   
 $y^2 + 5y - 4y - 20 = 0$   
 $y(y + 5) - 4(y + 5) = 0$   
 $(y - 4)(y + 5) = 0$   
 $y = -5, 4$

For  $x = -5$  and  $y = -5$ ,  $x = y$

For  $x = -6$ ,  $y = -5$  or  $4$ ,  $x < y$

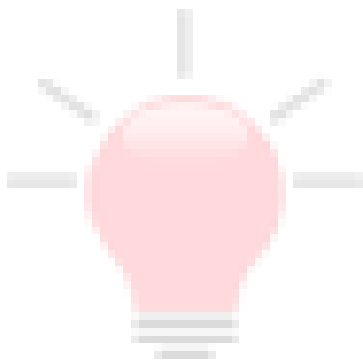
Therefore,  $x \leq y$

Hence, option B is correct.

10. I:  $4x^2 - 216 = 0$   
 $x^2 = 54$   
 $x = \pm 3 \times 6^{1/2}$

II.  $5y^3 - 810\sqrt{6} = 0$   
 $y^3 = 162\sqrt{6} = 3\sqrt{6} \times 3\sqrt{6} \times 3 \times \sqrt{6}$   
 $y = 3\sqrt{6}$

Hence, option B is correct.



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