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Quadratic Eqn Questions for RBI Asst. Pre, IBPS Clerk Pre and SBI Clerk Pre Exams.

Quadratic Eqn Quiz 32

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. $x^2 = 81$

II. $y^2 - 13y + 36 = 0$

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

2. I. $7x^2 - 9x = -2$

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

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. $x^2 - 225 = 0$

II. $y - \sqrt{225} = 0$

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. $x^2 - 9x = -20$

II. $y^2 - 13y = -42$

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. $x^2 - 15x + 56 = 0$

II. $y^2 - 11y + 30 = 0$

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. $x^2 + 12x + 36 = 0$
II. $y^2 + 10y + 24 = 0$

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. $x^2 - 7x + 12 = 0$
II. $4y^2 - 7y + 3 = 0$

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. $x^3 = 1728$
II. $y^2 - 196 = 0$

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. $2x^2 + 11x + 14 = 0$
II. $2y^2 - 5y + 3 = 0$

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. $x^2 - 36 = \sqrt{169}$
II. $3y^2 - 10y + 7 = 0$

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



Correct Answers:

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

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Explanation:

1. I. $x^2 = 81$

$$x = 9, -9$$

II. $y^2 - 13y + 36 = 0$

$$y^2 - 9y - 4y + 36 = 0$$

$$y(y - 9) - 4(y - 9) = 0$$

$$(y - 9)(y - 4) = 0$$

$$y = 9, 4$$

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

Hence, option E is correct.



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2. I. $7x^2 - 9x = -2$

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

$$7x(x - 1) - 2(x - 1) = 0$$

$$(7x - 2)(x - 1) = 0$$

$$x = \frac{2}{7}, 1$$



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$$\text{II. } y^2 - 4y + 3 = 0$$

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

$$y(y - 1) - 3(y - 1) = 0$$

$$(y - 3)(y - 1) = 0$$

$$y = 1, 3$$

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

Hence, option B is correct.

3. I. $x^2 - 225 = 0$

$$x^2 = 225$$

$$x = 15, -15$$

II. $y - \sqrt{225} = 0$

$$y = \sqrt{225}$$

$$y = 15$$

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

Hence, option B is correct.



4. I. $x^2 - 9x = -20$

$$x^2 - 9x + 20 = 0$$

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

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

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

$$x = 4, 5$$

II. $y^2 - 13y = -42$

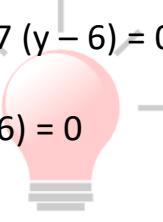
$$y^2 - 13y + 42 = 0$$

$$y^2 - 6y - 7y + 42 = 0$$

$$y(y - 6) - 7(y - 6) = 0$$

$$(y - 7)(y - 6) = 0$$

$$y = 6, 7$$

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While comparing the root values of x and y, we find that both the root values of x are less than y's. Therefore, $x < y$

Hence, option D is correct.

5. I. $x^2 - 15x + 56 = 0$

$$x^2 - 7x - 8x + 56 = 0$$

$$x(x - 7) - 8(x - 7) = 0$$

$$(x - 7)(x - 8) = 0$$

$$x = 7, 8$$

$$\text{II. } y^2 - 11y + 30 = 0$$

$$y^2 - 6y - 5y + 30 = 0$$

$$y(y - 6) - 5(y - 6) = 0$$

$$(y - 6)(y - 5) = 0$$

$$y = 6, 5$$

While comparing the root values of x and y, we find that both the root values of x are greater than y's. Therefore, $x > y$.

Hence, option A is correct.

6. According to the given equations :

$$\text{I. } x^2 + 12x + 36 = 0$$

$$\text{or, } x^2 + 6x + 6x + 36 = 0$$

$$\text{or, } x(x + 6) + 6(x + 6) = 0$$

$$\text{or, } (x + 6)(x + 6) = 0$$

$$\text{or, } x = -6, -6$$

$$\text{II. } y^2 + 10y + 24 = 0$$

$$\text{or, } y^2 + 4y + 6y + 24 = 0$$

$$\text{or, } y(y + 4) + 6(y + 4) = 0$$

$$\text{or, } (y + 4)(y + 6) = 0$$

$$\text{or, } y = -4, -6$$

While comparing the root values of x and y, we find that one root value of y is equal to x another one is greater than x. Therefore, $x \leq y$.

Hence, option B is correct.

7. According to the given equations :

$$\text{I. } x^2 - 7x + 12 = 0$$

$$\text{or, } x^2 - 3x - 4x + 12 = 0$$

$$\text{or, } x(x - 3) - 4(x - 3) = 0$$

$$\text{or, } (x - 3)(x - 4) = 0$$

$$\text{or, } x = 3, 4$$

$$\text{II. } 4y^2 - 7y + 3 = 0$$

$$\text{or, } 4y^2 - 4y - 3y + 3 = 0$$

$$\text{or, } 4y(y - 1) - 3(y - 1) = 0$$

$$\text{or, } (4y - 3)(y - 1) = 0$$

$$\text{or, } y = 3/4, 1$$

While comparing the root values of x and y , we find that both the root values of y are less than x 's. Hence, $x > y$.

Hence, option A is correct.

8. According to the given equations :

$$\text{I. } x^3 = 1728$$

$$\text{or, } x^3 = 12^3$$

$$\text{or, } x = 12$$

$$\text{II. } y^2 - 196 = 0$$

$$\text{or, } y^2 = 196$$

or, $y = \pm 14$

or, $y = + 14$ or $- 14$

As we can see that the root value of x is lying between the values of y . Therefore, a relationship between x and y can't be established.

Hence, option E is correct.

9. According to the given equations :

I. $2x^2 + 11x + 14 = 0$

or, $2x^2 + 4x + 7x + 14 = 0$

or, $2x(x + 2) + 7(x + 2) = 0$

or, $(2x + 7)(x + 2) = 0$

or, $x = -\frac{7}{2}, -2$

II. $2y^2 - 5y + 3 = 0$

or, $2y^2 - 2y - 3y + 3 = 0$

or, $2y(y - 1) - 3(y - 1) = 0$

or, $(2y - 3)(y - 1) = 0$

or, $y = 1, \frac{3}{2} = 1.5$

While comparing the root values of x and y , we find that both the values of x is less than y 's. Hence, $x < y$.

Hence, option D is correct.



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10. According to the given equations :

$$\text{I. } x^2 - 36 = \sqrt{169}$$

$$\text{or, } x^2 - 36 = 13$$

$$\text{or, } x^2 = 49$$

$$\text{or, } x = \pm 7$$

$$\text{II. } 3y^2 - 10y + 7 = 0$$

$$\text{or, } 3y^2 - 3y - 7y + 7 = 0$$

$$\text{or, } 3y(y - 1) - 7(y - 1) = 0$$

$$\text{or, } (3y - 7)(y - 1) = 0$$

$$\text{or, } y = 7/3, 1$$

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

Hence, option E is correct.





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