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

Quadratic Eqn. Quiz 30

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 $x \leq y$ 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. $x^2 - 11x + 24 = 0$
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 $x = y$ 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 $x \leq y$ 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. $x^3 = 7^3 - 127$
II. $y = 18^2 - 315$

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

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

- 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

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

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

- 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

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

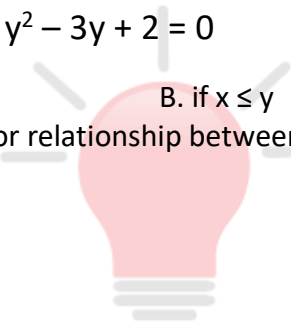
- A. if $x > y$ B. if $x \leq y$ C. if $x \geq y$ D. if $x < y$
E. if $x = y$ or relationship between x and y can't be established

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

- 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

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

- 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



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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 :

$$\text{I. } x^2 - 19x + 88 = 0$$

$$x^2 - 11x - 8x + 88 = 0$$

$$x(x - 11) - 8(x - 11) = 0$$

$$(x - 8)(x - 11) = 0$$

$$x = 8, 11$$

$$\text{II. } y^2 - 12y + 35 = 0$$

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

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

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

$$y = 7, 5$$

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

Hence, option A is correct.

2. According to the given equations :

$$\text{I. } x^2 - 11x + 24 = 0$$

$$x^2 - 3x - 8x + 24 = 0$$

$$x(x - 3) - 8(x - 3) = 0$$

$$(x - 3)(x - 8) = 0$$

$$x = 3, 8$$

$$\text{II. } y^2 - 16y + 63 = 0$$

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

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

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

$$y = 7, 9$$

While comparing the root values of x and y , we find that one root value of x 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 $x \leq y$.

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 :

$$\text{I. } 3x + 5y = 76$$

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

$$3(36 - 3y) + 5y = 76$$

$$108 - 9y + 5y = 76$$

$$108 - 76 = 4y$$

$$32 = 4y ; y = 8$$

$$\text{II. } x + 3y = 36$$

$$x = 36 - 3y$$

$$x = 36 - 3 \times 8$$

$$x = 36 - 24 = 12$$

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

Hence, option A is correct.

6.

$$\text{I. } 2x^2 - 12x + 16 = 0$$

$$\Rightarrow 2x^2 - 4x - 8x + 16 = 0$$

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

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

$$x = 4, 2$$

$$\text{II. } y^2 - 7y + 12 = 0$$

$$\Rightarrow y^2 - 4y - 3y + 12 = 0$$

$$\Rightarrow y(y - 4) - 3(y - 4) = 0$$

$$\Rightarrow (y - 3)(y - 4) = 0$$

$$y = 4, 3$$

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 lies between the values of y 's. Hence, the relationship between x and y can't be established.

Hence, option E is correct.

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

$$\begin{aligned} &\Rightarrow x^2 + 2x - 8x - 16 = 0 \\ &\Rightarrow x(x + 2) - 8(x + 2) = 0 \\ &\Rightarrow (x - 8)(x + 2) = 0 \\ &x = 8, -2 \end{aligned}$$

$$\begin{aligned} \text{II. } &y^2 + 5y + 6 = 0 \\ &\Rightarrow y^2 + 3y + 2y + 6 = 0 \\ &\Rightarrow y(y + 3) + 2(y + 3) = 0 \\ &\Rightarrow (y + 3)(y + 2) = 0 \\ &y = -3, -2 \end{aligned}$$

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, $x \geq y$.

Hence, option C is correct.

10.

$$\begin{aligned} \text{I. } &x^2 - x - 20 = 0 \\ &\Rightarrow x^2 - 5x + 4x - 20 = 0 \\ &\Rightarrow x(x - 5) + 4(x - 5) = 0 \\ &\Rightarrow (x + 4)(x - 5) = 0 \\ &x = -4, 5 \end{aligned}$$

$$\begin{aligned} \text{II. } &y^2 - 3y + 2 = 0 \\ &\Rightarrow y^2 - 2y - y + 2 = 0 \\ &\Rightarrow y(y - 2) - 1(y - 2) = 0 \\ &\Rightarrow (y - 1)(y - 2) = 0 \\ &y = 1, 2 \end{aligned}$$

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.

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