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

## Maths inequalities Quiz 1

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.  $x^3 - 4913 = 0$

II.  $y^2 - 361 = 0$

A. if  $x < y$

B. if  $x \leq y$

C. if  $x > y$

D. if  $x \geq y$

E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established

2. I.  $x^2 = 361$

II.  $y^3 = 7269 + 731$

A. if  $x < y$

B. if  $x > y$

C. if  $x \geq y$

D. if  $x \leq y$

E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established

3. I.  $15x^2 + x - 6 = 0$

II.  $5y^2 - 23y + 12 = 0$

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

4. I.  $x^3 - 2744 = 0$

II.  $y^2 - 256 = 0$

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.  $x^2 - 8x - 20 = 0$

II.  $3y^2 - 60y + 297 = 0$

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.  $2x^2 + 9x + 7 = 0$

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

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

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

II.  $3y^2 - 11y + 10 = 0$

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

8. I.  $2x^2 + 15x + 28 = 0$

II.  $2y^2 + 13y + 21 = 0$

- A. if  $x > y$   
D. if  $x \leq y$

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

9. I.  $x^2 - 8x + 15 = 0$

II.  $y^2 - 12y + 36 = 0$

- A. if  $x > y$   
D. if  $x \leq y$

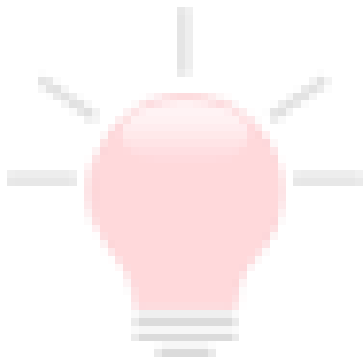
- B. if  $x \geq y$   
E. if  $x = y$  or relationship between  $x$  and  $y$  can't be established  
C. if  $x < y$

10. I.  $x^2 + 9x + 20 = 0$

II.  $y^2 = 16$

- A. if  $x > y$   
D. if  $x \leq y$

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



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**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>
E	A	B	E	E	E	A	D	C	D

**Explanations:**

**1.** I.  $x^3 - 4913 = 0$

or,  $x^3 = 4913$

$x = 17$

II.  $y^2 = 361$

or,  $y = \pm 19$

While comparing the values of  $x$  and  $y$ , one root value of  $y$  lies between the root values of  $x$   
Hence, option E is correct.

**2.** I.  $x^2 = 361$

$x = \pm 19$

II.  $y^3 = 7269 + 731$

$y^3 = 8000$

$y = 20$

$x < y$

Hence, option A is correct.

**3.** I.  $15x^2 + x - 6 = 0$

$15x^2 + 10x - 9x - 6 = 0$

$5x(3x + 2) - 3(3x + 2) = 0$

$(5x - 3)(3x + 2) = 0$

$x = \frac{3}{5}, -\frac{2}{3}$

II.  $5y^2 - 23y + 12 = 0$

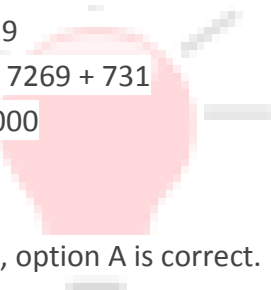
$5y^2 - 20y - 3y + 12 = 0$

$5y(y - 4) - 3(y - 4) = 0$

$(y - 4)(5y - 3) = 0$

$y = 4, \frac{3}{5}$

$x \leq y$



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Hence, option B is correct.

**4.** I.  $x^3 - 2744 = 0$

$$x^3 = 2744$$

$$x = 14$$

II.  $y^2 - 256 = 0$

$$y^2 = 256$$

$$y = \pm 16$$

While comparing the values of  $x$  and  $y$ , one root value of  $x$  lies between the root values of  $y$ .

Hence, option E is correct.

**5.** I.  $x^2 - 8x - 20 = 0$

$$\Rightarrow x^2 - 10x + 2x - 20 = 0$$

$$\Rightarrow x(x - 10) + 2(x - 10) = 0$$

$$\Rightarrow (x - 10)(x + 2) = 0$$

$$\text{Then, } x = +10 \text{ or } x = -2$$

II.  $3y^2 - 60y + 297 = 0$

$$\Rightarrow y^2 - 20y + 99 = 0 \text{ [Dividing both sides by 3]}$$

$$\Rightarrow y^2 - 11y - 9y + 99 = 0$$

$$\Rightarrow y(y - 11) - 9(y - 11) = 0$$

$$\Rightarrow (y - 11)(y - 9) = 0$$

$$\text{Then, } y = +11 \text{ or } y = +9$$

So, when  $x = +10$ ,  $x < y$  for  $y = +11$  and  $x > y$  for  $y = +9$

And when  $x = -2$ ,  $x < y$  for  $y = +11$  and  $x < y$  for  $y = +9$

$\therefore$  So, we can observe that one root value of  $x$  lies between the root values of  $y$ . Therefore, the relation between  $x$  and  $y$  can't be determined.

Hence, option (E) is correct.

**6.** I.  $2x^2 + 9x + 7 = 0$

$$\text{or, } 2x^2 + 2x + 7x + 7 = 0$$

$$\text{or, } 2x(x + 1) + 7(x + 1) = 0$$

$$\text{or, } (2x + 7)(x + 1) = 0$$

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

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

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

$$\text{or, } y(y + 2) + 2(y + 2) = 0$$

$$\text{or, } (y + 2)(y + 2) = 0$$

$$\therefore y = -2, -2$$

Hence, relationship can't be established between x and y.

Therefore, Option E is correct.

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

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

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

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

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

$$\therefore x = 3, 4$$

II.  $3y^2 - 11y + 10 = 0$

$$\text{or, } 3y^2 - 6y - 5y + 10 = 0$$

$$\text{or, } 3y(y - 2) - 5(y - 2) = 0$$

$$\text{or, } (3y - 5)(y - 2) = 0$$

$$\therefore y = 2, \frac{5}{3}$$

Hence,  $x > y$

Hence, option A is correct.

**8.** I.  $2x^2 + 15x + 28 = 0$

$$\text{or, } 2x^2 + 8x + 7x + 28 = 0$$

$$\text{or, } 2x(x + 4) + 7(x + 4) = 0$$

$$\text{or, } (2x + 7)(x + 4) = 0$$

$$\therefore x = -4, -\frac{7}{2}$$

II.  $2y^2 + 13y + 21 = 0$

$$\text{or, } 2y^2 + 6y + 7y + 21 = 0$$

$$\text{or, } 2y(y + 3) + 7(y + 3) = 0$$

$$\text{or, } (2y + 7)(y + 3) = 0$$

$$\therefore y = -3, -\frac{7}{2}$$

Hence,  $x \leq y$ .

Therefore, Option D is the correct answer.

**9.** I.  $x^2 - 8x + 15 = 0$

$$\text{or, } x^2 - 5x - 3x + 15 = 0$$

$$\text{or, } x(x - 5) - 3(x - 5) = 0$$

$$\text{or, } (x - 5)(x - 3) = 0$$

$$\therefore x = 5, 3$$

$$\text{II. } y^2 - 12y + 36 = 0$$

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

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

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

$$\therefore y = 6, 6$$

Hence,  $x < y$ . Hence, option C is correct.

$$10. \quad \text{I. } x^2 + 9x + 20 = 0$$

$$\text{or, } x^2 + 4x + 5x + 20 = 0$$

$$\text{or, } x(x + 4) + 5(x + 4) = 0$$

$$\text{or, } (x + 4)(x + 5) = 0$$

$$x = -4, -5$$

$$\text{II. } y^2 = 16$$

$$y = \sqrt{16} = \pm 4$$

While comparing the  $x$  and  $y$  values, we got one value of  $x$  is equal to  $y$  and other values is less than the root values of  $y$ .

Hence,  $x \leq y$ .

Hence, option D is correct.

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