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

## Quadratic Equation Quiz 2

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.  $\frac{21}{\sqrt{x}} + \frac{11}{\sqrt{x}} = 7\sqrt{x}$

II.  $2y^2 - 11y + 12 = 0$

- A. if  $x > y$   
D. if  $x < y$

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

- C. if  $x \geq y$

2. I.  $143x^2 + 43x - 66 = 0$

II.  $33y^2 - 40y + 12 = 0$

- A. if  $x = y$  or relationship between  $x$  and  $y$  can't be established  
C. if  $x \leq y$

- B. if  $x < y$   
E. if  $x > y$

- D. if  $x \geq y$

3. I.  $72x^2 - 101x + 35 = 0$

II.  $45y^2 - 62y + 21 = 0$

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

- B. if  $x \leq y$   
E. if  $x < y$

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

4. I.  $22x^2 + 6\sqrt{11x} - 8 = 0$

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

- A. if  $x = y$  or relationship between  $x$  and  $y$  can't be established  
C. if  $x \leq y$

- B. if  $x > y$   
E. if  $x \geq y$

- D. if  $x < y$

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

II.  $7y^2 - 34y - 48 = 0$

- A. if  $x < y$   
C. if  $x > y$

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

- E. if  $x \leq y$

6. I.  $45x^2 + 17\sqrt{15x} + 24 = 0$

II.  $y^2 + 7y + 12 = 0$

- A. if  $x > y$   
D. if  $x < y$

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

- C. if  $x \geq y$

7. I.  $\frac{4}{\sqrt{x}} + \frac{6}{\sqrt{x}} = 5\sqrt{x}$

II.  $y^2 + \sqrt{256} = \sqrt{625}$

- A. if  $x > y$   
D. if  $x = y$  or relationship between  $x$  and  $y$  can't be established

- B. if  $x < y$

- C. if  $x \leq y$   
E. if  $x \geq y$

8. I.  $117x^2 + 128x + 35 = 0$

II.  $39y^2 - 31y - 28 = 0$

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

9. I.  $36x^2 + 55x + 21 = 0$

II.  $132y^2 - 17y - 30 = 0$

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

10. I.  $12x^2 - 29x + 15 = 0$

II.  $54y^2 - 20\sqrt{18} + 33 = 0$

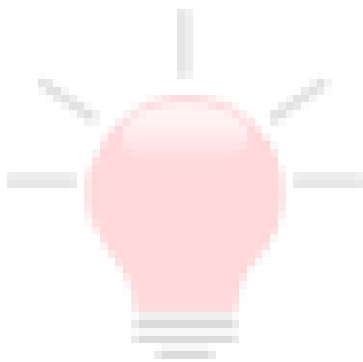
A. if  $x > y$

B. if  $x \leq y$

C. if  $x \geq y$

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

E. 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>
A	C	C	A	B	A	D	B	C	D

**Explanations:**

**1.** I.  $\frac{21}{\sqrt{x}} + \frac{11}{\sqrt{x}} = 7\sqrt{x}$

$$\frac{21+11}{\sqrt{x}} = 7\sqrt{x}$$

$$\frac{32}{\sqrt{x}} = 7\sqrt{x}$$

$$x = \frac{32}{7}$$

II.  $2y^2 - 11y + 12 = 0$

$$2y^2 - 8y - 3y + 12 = 0$$

$$2y(y-4) - 3(y-4) = 0$$

$$(2y-3)(y-4) = 0$$

$$y = \frac{3}{2}, 4$$

$$x > y$$

Hence, option A is correct.

**2.** I.  $143x^2 + 43x - 66 = 0$

$$\text{or, } 143x^2 + (121 - 78)x - 66 = 0$$

$$\text{or, } 143x^2 + 121x - 78x - 66 = 0$$

$$\text{or, } 11x(13x + 11) - 6(13x + 11) = 0$$

$$\text{or, } (13x + 11)(11x - 6) = 0$$

$$x = \frac{6}{11}, -\frac{11}{13}$$

II.  $33y^2 - 40y + 12 = 0$

$$\text{or, } 33y^2 - (22 + 18)y + 12 = 0$$

$$\text{or, } 33y^2 - 22y - 18y + 12 = 0$$

$$\text{or, } 11y(3y - 2) - 6(3y - 2) = 0$$

$$\text{or, } (11y - 6)(3y - 2) = 0$$

$$y = \frac{6}{11}, \frac{2}{3}$$

$$x \leq y$$

Hence, option C is correct.

**3.** I.  $72x^2 - 101x + 35 = 0$

or,  $72x^2 - (56 + 45)x + 35 = 0$

or,  $72x^2 - 56x - 45x + 35 = 0$

or,  $8x(9x - 7) - 5(9x - 7) = 0$

$(8x - 5)(9x - 7) = 0$

$x = \frac{5}{8}, \frac{7}{9}$

II.  $45y^2 - 62y + 21 = 0$

or,  $45y^2 - (35 + 27)y + 21 = 0$

or,  $45y^2 - 35y - 27y + 21 = 0$

or,  $5y(9y - 7) - 3(9y - 7) = 0$

$(5y - 3)(9y - 7) = 0$

$y = \frac{3}{5}, \frac{7}{9}$

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

**4.** I.  $22x^2 + 6\sqrt{11}x - 8 = 0$

or,  $22x^2 + (8\sqrt{11} - 2\sqrt{11})x - 8 = 0$

or,  $22x^2 + 8\sqrt{11}x - 2\sqrt{11}x - 8 = 0$

or,  $2\sqrt{11}x(\sqrt{11}x + 4) - 2(\sqrt{11}x + 4) = 0$

$(2\sqrt{11}x - 2)(\sqrt{11}x + 4) = 0$

$x = \frac{1}{11}, -\frac{4}{11}$

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

or,  $3y^2 + (15 - 1)y - 5 = 0$

or,  $3y^2 + 15y - y - 5 = 0$

or,  $3y(y + 5) - 1(y + 5) = 0$

$(3y - 1)(y + 5) = 0$

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

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

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**5. I.**  $56x^2 + 15x - 56 = 0$   
 or,  $56x^2 + (64 - 49)x - 56 = 0$   
 or,  $56x^2 + 64x - 49x - 56 = 0$   
 or,  $8x(7x + 8) - 7(7x + 8) = 0$   
 $(7x + 8)(8x - 7) = 0$   
 $x = \frac{7}{8}, -\frac{8}{7}$

**II.**  $7y^2 - 34y - 48 = 0$   
 or,  $7y^2 - (42 - 8)y - 48 = 0$   
 or,  $7y^2 - 42y + 8y - 48 = 0$   
 or,  $7y(y - 6) + 8(y - 6) = 0$   
 $(7y + 8)(y - 6) = 0$

$y = -\frac{8}{7}, 6$

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

**6. I.**  $45x^2 + 17\sqrt{15x} + 24 = 0$

$45x^2 + 9\sqrt{15x} + 8\sqrt{15x} + 24 = 0$

$3\sqrt{15x}(\sqrt{15x} + 3) + 8(\sqrt{15x} + 3) = 0$

$(\sqrt{15x} + 3)(3\sqrt{15x} + 8) = 0$

$x = -\frac{3}{\sqrt{15}}, -\frac{8}{3\sqrt{15}}$

**II.**  $y^2 + 7y + 12 = 0$

$y^2 + 4y + 3y + 12 = 0$

$y(y + 4) + 3(y + 4) = 0$

$(y + 4)(y + 3) = 0$

$y = -4, -3$

$x > y$

Hence, option A is correct.

7. I.  $\frac{4}{\sqrt{x}} + \frac{6}{\sqrt{x}} = 5\sqrt{x}$

or,  $\frac{4+6}{\sqrt{x}} = 5\sqrt{x}$

$10 = 5x$

$x = 2$

II.  $y^2 + \sqrt{256} = \sqrt{625}$

$y^2 + 16 = 25$

$y^2 = 25 - 16$

$y^2 = 9$

$y = \pm 3$

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

8. I.  $117x^2 + 128x + 35 = 0$

$117x^2 + 65x + 63x + 35 = 0$

$13x(9x + 5) + 7(9x + 5) = 0$

$(13x + 7)(9x + 5) = 0$

$x = -\frac{7}{13}, -\frac{5}{9}$

II.  $39y^2 - 31y - 28 = 0$

$39y^2 - 52y + 21y - 28 = 0$

$13y(3y - 4) + 7(3y - 4) = 0$

$(3y - 4)(13y + 7) = 0$

$y = \frac{4}{3}, -\frac{7}{13}$

$x \leq y$

Hence, option B is correct.

9. I.  $36x^2 + 55x + 21 = 0$

$36x^2 + 28x + 27x + 21 = 0$

$4x(9x + 7) + 3(9x + 7) = 0$

$(9x + 7)(4x + 3) = 0$

$x = -\frac{7}{9}, -\frac{3}{4}$

II.  $132y^2 - 17y - 30 = 0$

$132y^2 - 72y + 55y - 30 = 0$

$12y(11y - 6) + 5(11y - 6) = 0$

$(11y - 6)(12y + 5) = 0$

$y = \frac{6}{11}, -\frac{5}{12}$

$x < y$

Hence, option C is correct.

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10. I.  $12x^2 - 29x + 15 = 0$

$$12x^2 - 20x - 9x + 15 = 0$$

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

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

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

II.  $54y^2 - 20\sqrt{18y} + 33 = 0$

$$54y^2 - 11\sqrt{18y} - 9\sqrt{18y} + 33 = 0$$

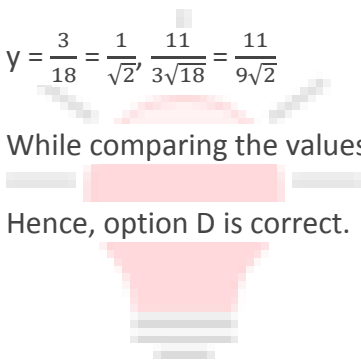
$$\sqrt{18y}(3\sqrt{18y} - 11) - 3(3\sqrt{18y} - 11) = 0$$

$$(\sqrt{18y} - 3)(3\sqrt{18y} - 11) = 0$$

$$y = \frac{3}{18} = \frac{1}{\sqrt{2}}, \frac{11}{3\sqrt{18}} = \frac{11}{9\sqrt{2}}$$

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

Hence, option D is correct.



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