

Course: SBI PO & IBPS Prelims
Subject: Quadratic Equation

Time:12 Minutes

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Directions (1-5): इनमें से प्रत्येक प्रश्न में, दो समीकरण (I) और (II) दिए गए हैं। दोनों समीकरणों को हल करें और उत्तर दीजिए:

(a) यदि $x > y$

(b) यदि $x \geq y$

(c) यदि $x = y$ या x और y के बीच कोई संबंध स्थापित नहीं किया जा सकता है.

(d) यदि $y > x$

(e) यदि $y \geq x$

Q1. (i) $x^2 - 12x + 32 = 0$
(ii) $y^2 - 20y + 96 = 0$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Q2. (i) $2x^2 - 3x - 20 = 0$
(ii) $2y^2 + 11y + 15 = 0$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Q3. (i) $x^2 - x - 6 = 0$
(ii) $y^2 - 6y + 8 = 0$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Q4. (i) $x^2 + 14x - 32 = 0$
(ii) $y^2 - y - 12 = 0$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Q5. (i) $x^2 - 9x + 20 = 0$
(ii) $2y^2 - 12y + 18 = 0$

L1Difficulty 3

QTags Quadratic Equation
QCreator AYUSH PANDEY

Directions (6-10): इनमें से प्रत्येक प्रश्न में, दो समीकरण (I) और (II) दिए गए हैं। दोनों समीकरणों को हल करें और उत्तर दीजिए:

(a) यदि $x > y$

(b) यदि $x \geq y$

(c) यदि $x = y$ या x और y के बीच कोई संबंध स्थापित नहीं किया जा सकता है.

(d) यदि $y > x$

(e) यदि $y \geq x$

Q6. (i) $x^2 - 12x + 32 = 0$

(ii) $y^2 - 20y + 96 = 0$

L1Difficulty 3

QTags Quadratic Equation
QCreator AYUSH PANDEY

Q7. (i) $2x^2 - 3x - 20 = 0$

(ii) $2y^2 + 11y + 15 = 0$

L1Difficulty 3

QTags Quadratic Equation
QCreator AYUSH PANDEY

Q8. (i) $x^2 - x - 6 = 0$

(ii) $y^2 - 6y + 8 = 0$

L1Difficulty 3

QTags Quadratic Equation
QCreator AYUSH PANDEY

Q9. (i) $x^2 + 14x - 32 = 0$

(ii) $y^2 - y - 12 = 0$

L1Difficulty 3

QTags Quadratic Equation
QCreator AYUSH PANDEY

Q10. (i) $x^2 - 9x + 20 = 0$

(ii) $2y^2 - 12y + 18 = 0$

L1Difficulty 3

QTags Quadratic Equation
QCreator AYUSH PANDEY

Directions (11-15): इनमें से प्रत्येक प्रश्न में, दो समीकरण (I) और (II) दिए गए हैं। दोनों समीकरणों को हल करें और उत्तर दीजिए:

(a) यदि $x > y$

(b) यदि $x \geq y$

(c) यदि $x < y$

(d) यदि $x \leq y$

(e) यदि $x = y$ या x और y के बीच कोई संबंध स्थापित नहीं किया जा सकता है.

Q11. I. $3x^2 - 19x + 28 = 0$

II. $4y^2 - 19y + 21 = 0$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Q12. I. $3x + 4y = 2$

II. $6x + 2y = 2.5$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Q13. I. $8x + 7y = -60$

II. $7x - 5y = -8$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Q14. I. $12x^2 - 41x + 35 = 0$

II. $3y + 25y = 49$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Q15. I. $x^2 + 16x + 63 = 0$

II. $y^2 + 8y + 15 = 0$

L1Difficulty 3

QTags Quadratic Equation

QCreator AYUSH PANDEY

Solution

S1. Ans.(e)

Sol.

$$(i) x^2 - 12x + 32 = 0$$

$$x^2 - 8x - 4x + 32 = 0$$

$$x(x - 8) - 4(x - 8) = 0$$

$$(x - 8)(x - 4) = 0$$

$$x = 8, 4$$

$$(ii) y^2 - 20y + 96 = 0$$

$$y^2 - 12y - 8y + 96 = 0$$

$$y(y - 12) - 8(y - 12) = 0$$

$$(y - 8)(y - 12) = 0$$

$$y = 8, 12$$

$$y \geq x$$

S2. Ans.(b)

Sol.

$$(i) 2x^2 - 3x - 20 = 0$$

$$2x^2 - 8x + 5x - 20 = 0$$

$$2x(x - 4) + 5(x - 4) = 0$$

$$(x - 4)(2x + 5) = 0$$

$$x = 4, -5/2$$

$$(ii) 2y^2 + 11y + 15 = 0$$

$$2y^2 + 6y + 5y + 15 = 0$$

$$2y(y + 3) + 5(y + 3) = 0$$

$$(2y + 5)(y + 3) = 0$$

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

$$x \geq y$$

S3. Ans.(c)

Sol.

$$(i) x^2 - x - 6 = 0$$

$$x^2 - 3x + 2x - 6 = 0$$

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

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

$$x = 3, -2$$

$$(ii) y^2 - 6y + 8 = 0$$

$$y^2 - 2y - 4y + 8 = 0$$

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

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

$$y = 2, 4$$

No relation can be established between x and y

S4. Ans.(c)

Sol.

$$(i) x^2 + 14x - 32 = 0$$

$$x^2 + 16x - 2x - 32 = 0$$

$$x(x+16) - 2(x+16) = 0$$

$$(x-2)(x+16) = 0$$

$$x = -16, 2$$

$$(ii) y^2 - y - 12 = 0$$

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

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

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

$$y = -3, 4$$

No relation

S5. Ans.(a)

Sol.

$$(i) x^2 - 9x + 20 = 0$$

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

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

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

$$x = 4, 5$$

$$(ii) 2y^2 - 12y + 18 = 0$$

$$2y^2 - 6y - 6y + 18 = 0$$

$$2y(y-3) - 6(y-3) = 0$$

$$(2y-6)(y-3) = 0$$

$$y = 3, 3$$

$x > y$

S6. Ans.(e)

Sol.

$$(i) x^2 - 12x + 32 = 0$$

$$x^2 - 8x - 4x + 32 = 0$$

$$x(x-8) - 4(x-8) = 0$$

$$(x-8)(x-4) = 0$$

$$x = 8, 4$$

$$(ii) y^2 - 20y + 96 = 0$$

$$y^2 - 12y - 8y + 96 = 0$$

$$y(y - 12) - 8(y - 12) = 0$$

$$(y - 8)(y - 12) = 0$$

$$y = 8, 12$$

$$y \geq x$$

S7. Ans.(b)

Sol.

$$(i) 2x^2 - 3x - 20 = 0$$

$$2x^2 - 8x + 5x - 20 = 0$$

$$2x(x - 4) + 5(x - 4) = 0$$

$$(x - 4)(2x + 5) = 0$$

$$x = 4, -5/2$$

$$(ii) 2y^2 + 11y + 15 = 0$$

$$2y^2 + 6y + 5y + 15 = 0$$

$$2y(y + 3) + 5(y + 3) = 0$$

$$(2y + 5)(y + 3) = 0$$

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

$$x \geq y$$

S8. Ans.(c)

Sol.

$$(i) x^2 - x - 6 = 0$$

$$x^2 - 3x + 2x - 6 = 0$$

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

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

$$x = 3, -2$$

$$(ii) y^2 - 6y + 8 = 0$$

$$y^2 - 2y - 4y + 8 = 0$$

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

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

$$y = 2, 4$$

No relation can be established between x and y

S9. Ans.(c)

Sol.

$$(i) x^2 + 14x - 32 = 0$$

$$x^2 + 16x - 2x - 32 = 0$$

$$x(x + 16) - 2(x + 16) = 0$$

$$(x - 2)(x + 16) = 0$$

$$x = -16, 2$$

$$(ii) y^2 - y - 12 = 0$$

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

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

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

$$y = -3, 4$$

No relation

S10. Ans.(a)

Sol.

$$(i) x^2 - 9x + 20 = 0$$

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

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

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

$$x = 4, 5$$

$$(ii) 2y^2 - 12y + 18 = 0$$

$$2y^2 - 6y - 6y + 18 = 0$$

$$2y(y - 3) - 6(y - 3) = 0$$

$$(2y - 6)(y - 3) = 0$$

$$y = 3, 3$$

$x > y$

S11. Ans.(e)

Sol.

$$I. 3x^2 - 19x + 28 = 0$$

$$3x^2 - 12x - 7x + 28 = 0$$

$$3x(x - 4) - 7(x - 4) = 0$$

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

$$II. 4y^2 - 19y + 21 = 0$$

$$4y^2 - 12y - 7y + 21 = 0$$

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

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

Relation cannot establish

S12. Ans.(a)

Sol.

$$3x + 4y = 2 \quad \dots(i)$$

$$6x + 2y = 2.5 \quad \dots(ii)$$

Solving (i) & (ii)

$$x = \frac{1}{3}, y = \frac{1}{4}$$

$x > y$

S13. Ans.(e)

Sol.

$$8x + 7y = -60 \quad \dots(i)$$

$$7x - 5y = -8 \quad \dots(ii)$$

On solving (i) & (ii)

We get $x = -4, y = -4$

$$x = y$$

S14. Ans.(d)

Sol.

$$12x^2 - 41x + 35 = 0$$

$$12x^2 - 20x - 21x + 35 = 0$$

$$4x(3x - 5) - 7(3x - 5) = 0$$

$$x = \frac{5}{3}, \frac{7}{4}$$

$$\text{II. } 28y = 49$$

$$y = \frac{49}{28} = \frac{7}{4}$$

$$y \geq x$$

S15. Ans.(c)

Sol.

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

$$x^2 + 9x + 7x + 63 = 0$$

$$x = -7, -9$$

$$y^2 + 8y + 15 = 0$$

$$y^2 + 5y + 3y + 15 = 0$$

$$y = -3, -5$$

$$x < y$$