Quiz Date: 23rd June 2020

Directions (1-15): In following questions two equations are given. Solve the equations and give answer

Q1.
I. $x^2 + 10x + 24 = 0$
II. $4y^2 - 17y + 18 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q2.
I. $x^2 = 729$
II. $y = \sqrt{729}$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q3.
I. $x^2 - 1 = 0$
II. $y^2 + 4y + 3 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q4.
I. $x^2 - 7x + 12 = 0$
II. $y^2 - 12y + 32 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q5.
I. $3x^2 - 20x - 32 = 0$
II. $2y^2 - 3y - 20 = 0$
(a) if x < y
(b) if x > y

(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q6.
I. $3x^2 - 11x + 10 = 0$
II. $2y^2 - 3y - 2 = 0$
(a) x ≥ y
(b) x ≤ y
(c) x < y
(d) x > y
(e) x = y or Relationship between x and y cannot be established

Q7.
I. $x^2 - 9x + 20 = 0$
II. $2y^2 - 13y + 18 = 0$
(a) x ≥ y
(b) x ≤ y
(c) x < y
(d) x > y
(e) x = y or Relationship between x and y cannot be established

Q8.
I. $\frac{(2)^5+(11)^3}{6} = x^3$
II. $4y^3 = -(589 \div 4) + 5y^3$
(a) x ≥ y
(b) x ≤ y
(c) x < y
(d) x > y
(e) x = y or Relationship between x and y cannot be established

Q9.
I. $5x^2 - 18x + 9 = 0$
II. $3y^2 + 5y - 2 = 0$
(a) x ≥ y
(b) x ≤ y

(c) x < y
(d) x > y
(e) x = y or Relationship between x and y cannot be established

Q10. **I.** $x^2 - 19x + 84 = 0$
II. $y^2 - 25y + 156 = 0$
(a) x ≥ y
(b) x ≤ y
(c) x < y
(d) x > y
(e) x = y or Relationship between x and y cannot be established

Q11. **I.** $x^2 - x - 6 = 0$
II. $2y^2 + 13y + 21 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q12. **I.** $x^2 = 4$
II. $y^2 + 6y + 9 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q13. **I.** $2x + 3y = 4$
II. $3x + 2y = 11$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q14. **I.** $x^2 - 7x + 12 = 0$
II. $y^2 + 4y + 3 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y

(d) if x ≥ y
(e) if x = y or no relation can be established

Q15. **I.** $\sqrt{361}x + \sqrt{16} = 0$
II. $\sqrt{441}y + 4 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Solutions

S1. Ans.(a)
Sol.
$x^2 + 6x + 4x + 24 = 0$
$x(x + 6) + 4(x + 6) = 0$
$(x + 4)(x + 6) = 0$
$x = -4, -6$
$4y^2 - 8y - 9y + 18 = 0$
$4y(y - 2) - 9(y - 2) = 0$
$(4y - 9)(y - 2) = 0$
$y = \frac{9}{4}, 2$
$x < y$

S2. Ans.(c)
Sol.
$x^2 - 729 = 0$
$(x - 27)(x + 27) = 0$
$x = 27, -27$
$y = \sqrt{729} = 27$
$x \leq y$

S3. Ans.(d)

Sol.

$(x - 1)(x + 1) = 0$

$x = 1, -1$

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

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

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

$y = -1, -3$

$x \geq y$

S4. Ans.(c)

Sol.

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

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

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

$x = 3, 4$

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

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

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

$y = 4, 8$

$x \leq y$

S5. Ans.(e)

Sol.

$3x^2 - 24x + 4x - 32 = 0$

$3x(x - 8) + 4(x - 8) = 0$

$(3x + 4)(x - 8) = 0$

$x = -\frac{4}{3}, 8$

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

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

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

$y = -\frac{5}{2}, 4$

No relation can be established

S6. Ans.(e)

Sol.

I. $3x^2 - 11x + 10 = 0$

$\Rightarrow 3x^2 - 6x - 5x + 10 = 0$

$\Rightarrow (x - 2)(3x - 5) = 0$

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

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

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

$\Rightarrow (y - 2)(2y + 1) = 0$

$\Rightarrow y = 2, -\frac{1}{2}$

No relation

S7. Ans.(e)

Sol.

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

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

$\Rightarrow x = 4, 5$

II. $2y^2 - 13y + 18 = 0$

$\Rightarrow 2y^2 - 4y - 9y + 18 = 0$

$\Rightarrow (y - 2)(2y - 9) = 0$

$\Rightarrow y = 2, \frac{9}{2}$

No relation

S8. Ans.(d)

Sol.

I. $x^3 = \frac{1363}{6}$

II. $4y^3 = -\frac{589}{4} + 5y^3$

$\Rightarrow y^3 = \frac{589}{4}$

$x > y$

S9. Ans.(d)

Sol.

I. $5x^2 - 18x + 9 = 0$
$\Rightarrow 5x^2 - 15x - 3x + 9 = 0$
$\Rightarrow (x - 3)(5x - 3) = 0$
$\Rightarrow x = 3, \frac{3}{5}$
II. $3y^2 + 5y - 2 = 0$
$\Rightarrow 3y^2 + 6y - y - 2 = 0$
$\Rightarrow (y + 2)(3y - 1) = 0$
$\Rightarrow y = \frac{1}{3}, -2$
$x > y$

S10. Ans.(b)
Sol.
I. $x^2 - 19x + 84 = 0$
$\Rightarrow (x - 12)(x - 7) = 0$
$\Rightarrow x = 12, 7$
II. $y^2 - 25y + 156 = 0$
$\Rightarrow (y - 12)(y - 13) = 0$
$\Rightarrow y = 12, 13$
$y \geq x$

S11. Ans.(b)
Sol.
I. $x^2 - x - 6 = 0$
$\Rightarrow x^2 - 3x + 2x - 6 = 0$
$\Rightarrow x(x - 3) + 2(x - 3) = 0$
$\Rightarrow (x + 2)(x - 3) = 0$
$\Rightarrow x = -2, 3$
II. $2y^2 + 13y + 21 = 0$
$\Rightarrow 2y^2 + 7y + 6y + 21 = 0$
$\Rightarrow y(2y + 7) + 3(2y + 7) = 0$
$\Rightarrow (y + 3)(2y + 7) = 0$
$\Rightarrow y = -3, -\frac{7}{2}$
$\therefore x > y$

S12. Ans.(b)
Sol.

I. $x^2 = 4$
$\Rightarrow x^2 - 4 = 0$
$\Rightarrow (x-2)(x+2) = 0$
$\Rightarrow x = 2, -2$
II. $y^2 + 6y + 9 = 0$
$\Rightarrow y^2 + 3y + 3y + 9 = 0$
$\Rightarrow y(y+3) + 3(y+3) = 0$
$\Rightarrow (y+3)(y+3) = 0$
$\Rightarrow y = -3$
$\therefore x > y$

S13. Ans.(b)
Sol.
I. $2x + 3y = 4$
II. $3x + 2y = 11$
On (i) $\times 3 - (ii) \times 2$
x = 5, y = – 2
$\therefore x > y$

S14. Ans.(b)
Sol.
I. $x^2 - 7x + 12 = 0$
$\Rightarrow x^2 - 4x - 3x + 12 = 0$
$\Rightarrow x(x-4) - 3(x-4) = 0$
$\Rightarrow (x-3)(x-4) = 0$
$\Rightarrow x = 3, 4$
II. $y^2 + 4y + 3 = 0$
$\Rightarrow y^2 + 3y + y + 3 = 0$
$\Rightarrow y(y+3) + 1(y+3) = 0$
$\Rightarrow (y+1)(y+3) = 0$
$\Rightarrow y = -1, = -3$
$\therefore x > y$

S15. Ans.(a)
Sol.
I. $\sqrt{361}x + \sqrt{16} = 0$
$\Rightarrow 19x + 4 = 0$
$\Rightarrow x = -\frac{4}{19}$
II. $\sqrt{441}\, y + 4 = 0$
$\Rightarrow 21y + 4 = 0$
$\Rightarrow y = -\frac{4}{21}$
$\therefore x < y$