Quadratic Equation for SBI PO Prelims

Quadratic Equation for SBI PO Prelims

Quadratic Equation

Following question contains two equations as I and II. You have to solve both equations and determine the relationship between.

1. I) $x^2 - 22x + 105 = 0$

II) $y^2 - 12y + 35 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

2. I) **$4x^2 - 25x + 36 = 0$**

II) **$2y^2 - 25y + 72 = 0$**

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

3. I) $x^2 - 13x - 198 = 0$

II) $2y^2 + 42y + 220 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

4.

I. **$2x^2 + 24x + 72 = 0$**
II. **$3y^2 + 30y + 75 = 0$**

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

5. I) **$3x^2 - 3x - 36 = 0$**

II) **$4y^2 + 20y + 24 = 0$**

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

6. I) **$5x^2 - 3x - 36 = 0$**

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II) $3y^2 + 30y + 72 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

7. I) $6x^2 – 19x + 15 = 0$

II) $5y^2 – 34y + 24 = 0$

A.If x > y

B.If x < y

C.If x ≥ y

D.If x ≤ y

E.If x = y or relationship between x and y cannot be determined.

8. I). $x^2 – 31x + 228 = 0$

II). $y^2 – 21y + 108 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

9. I) $x^2 + 2x – 120 = 0$

II) $y^2 – 12y + 20 = 0$

A.x > y

B.x ≥ y

C.x = y or relationship can't be determined.

D.x < y

E.x ≤ y

10. I) $x^2 – 21x - 130 = 0$

II) $y^2 + 26y + 169 = 0$

A.x > y

B.x ≥ y

C.x = y or relationship can't be determined.

D.x < y

E.x ≤ y

11. I). $x^2 + 31x + 234 = 0$

II). $y^2 + 21y + 104 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

12. I). $8x^2 + 5x – 42 = 0$

II). $7y^2 + 43y + 60 = 0$

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A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

13. I)$x^2 - 29x + 210 = 0$

II)$8y^2 - 49y + 45 = 0$

A.If x < y

B.If x > y

C.If x ≤ y

D.If x ≥ y

E.If relationship between x and y cannot be determined

14. I) $4x^2 + 14x + 12 = 0$

II) $3y^2 + 18y + 27 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

15. I.$3p^2 - 5p - 12 = 0$
II.$2q^2 - 3q - 14 = 0$

A)If p > q
B)If p < q
C)If p ≥ q
D)If p ≤ q
E)If p = q or relation cannot be established

16. I.$2p^2 - 17p + 35 = 0$
II.$3q^2 - 13q + 14 = 0$

A)If p > q
B)If p < q
C)If p ≥ q
D)If p ≤ q
E)If p = q or relation cannot be established

17. I.$3p^2 + p - 24 = 0$
II.$3q^2 - 20q + 32 = 0$

A)If p > q
B)If p < q
C)If p ≥ q
D)If p ≤ q
E)If p = q or relation cannot be established

18. I) $6x^2 - 19x + 15 = 0$

II) $10y^2 - 29y - 21 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

19. I. $8x^2 - 22x + 15 = 0$

II. $3y^2 - 13y + 14 = 0$

A.x < y

B.x ≥ y

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C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

20.I) $x^2 - 2x - 3 = 0$

II) $y^2 + 18y + 72 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

21. I) $x^2 + 19x + 34 = 0$

II) $y^2 - 14y - 32 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

22. I) $2x^2 - 28x + 96 = 0$

II) $y^2 - 34y + 288 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

23. I) $x^2 - 19x + 18 = 0$

II) $y^2 + y - 2 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

24. I) $3x^2 + 21x + 36 = 0$

II) $2y^2 + 18y + 36 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

25. I) $3x^2 + 30x + 63 = 0$

II) $2y^2 + 20y + 42 = 0$

A.x = y or relationship can't be determined.

B.x ≥ y

C.x < y

D.x > y

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E.x ≤ y

26. I) $5x^2 - 14x - 55 = 0$

II) $4y^2 - 2y - 56 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

27. I) $x^2 - 30x + 81 = 0$

II) $3y^2 - 9y + 6 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

28. I) $3x^2 - 25x + 52 = 0$

II) $2y^2 - 23y + 65 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

29. I) $x^2 + 12x + 20 = 0$

II)$y^2 + 13y + 22 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

30. I) $2x^2 - 14x + 24 = 0$

II) $y^2 - 9y - 52 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

31.**I) $x^2 + 19x + 88 = 0$**

II) $y^2 + 13y + 40 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

32. I) $x^2 - 26x + 153 = 0$

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II) y^2 - 22y + 117 =0

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

33. I) x^2 – 22x + 105 = 0

II) y^2 – 12y + 35 = 0

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

34. I) **x^2 + 23x + 120=0**

II)**y^2 + 26y + 165=0**

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

35. I. x^2 - 15x + 56 = 0

II. y2 - 26y + 165 = 0

a) x < y

b) x > y

c) x ≤ y

d) x ≥ y

e) x = y or relationship cannot be established

36. I) **x^2 + 11x + 24=0**

II) **y^2 + 13y + 40=0**

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

37. I) **$2x^2$ – 18x + 36=0**

II) **y^2 – 9y + 18=0**

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

38. I) x + y = 45

II) x – 2y = 15

A.x < y

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B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

39. I) $x^2 + 18x + 80=0$

II) $y^2 + 21y + 104=0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

40. I. $x^2 = 11449$

II. $y = \sqrt{11449}$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

41. I.$4x^2 - 13x + 10 = 0$

II.$4y^2 + 7y - 2 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

42. I.$3p^2 + 25p + 50 = 0$
II.$2q^2 + 9q + 10 = 0$

A)If p > q
B)If p < q
C)If p ≥ q
D)If p ≤ q
E)If p = q or relation cannot be established

43. I.$3p^2 – 4p – 4 = 0$

II.$3q^2 – 10q – 8 = 0$

A)If p > q
B)If p < q
C)If p ≥ q
D)If p ≤ q
E)If p = q or relation cannot be established

44.

I. $2x^2 – 7x + 6 = 0$
II. $y^2 + 13y + 42 = 0$

A.if x < y

B.if x > y

C.if x ≤ y

D.if x ≥ y

E.if relationship between x and y cannot be determined

45.

I. $2x^2– 9x + 9 = 0$

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II. $8y^2 + 34y + 21 = 0$

A.if x < y

B.if x > y

C.if x ≤ y

D. if x ≥ y

E.if relationship between x and y cannot be determined

46.

I. $2x^2 - 13x + 15 = 0$
II. $3y^2 + 28y + 65 = 0$

A.if x < y

B.if x > y

C.if x ≤ y

D.if x ≥ y

E.if relationship between x and y cannot be determined

47. **I)** $x^2 + 26x - 87 = 0$

II) $y^2 - 12y + 35 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

48. **I)** $x^2 + 14x - 51 = 0$

II) $y^2 - 8y + 15 = 0$

A.x < y

B.x ≥ y

C.x > y

D.x ≤ y

E.x = y or the relation cannot be established

49. I: $2x^2 - 13x + 20 = 0$

II: $2y^2 - 17y + 36 = 0$

A.If x < y

B.If x > y

C.If x ≤ y

D.If x ≥ y

E.If relationship between x and y cannot be determined

50. I) $x^2 - 13x - 114 = 0$

II) $y^2 + 21y + 104 = 0$

A.x > y

B.x ≥ y

C.x = y or relationship can't be determined.

D.x < y

E.x ≤ y

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Answer and Explanation

1. Answer: B

$x^2 - 22x + 105 = 0$

$x^2 - 15x - 7x + 105 = 0$

$x(x - 15) - 7(x - 15) = 0$

$(x - 7)(x - 15) = 0$

$x = 7, 15$

$y^2 - 12y + 35 = 0$

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

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

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

$y = 5, 7$

$x \geq y$

2.Answer: A

I) $4x^2 - 25x + 36 = 0$

$4x^2 - 16x - 9x + 36 = 0$

$4x (x - 4) - 9 (x - 4) = 0$

$(4x - 9) (x - 4) = 0$

$x = 2.25, 4$

II) $2y^2 - 25y + 72 = 0$

$2y^2 - 16y - 9y + 72 = 0$

$2y (y - 8) - 9 (y - 8) = 0$

$(2y - 9) (y - 8) = 0$

$y = 4.5, 8$

Hence, x < y

3. Answer: C

I) $x^2 - 13x - 198 = 0$

$(x - 22) (x + 9) = 0$

$x = 22, -9$

II) $2y^2 + 42y + 220 = 0$

$2y^2 + 20y + 22y + 220 = 0$

$2y (y + 10) + 22 (y + 10) = 0$

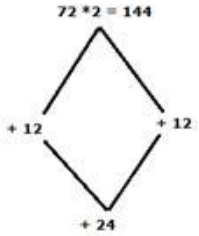
$(2y + 22) (y + 10) = 0$

$y = -11, -10$

Hence x > y

4.Answer: A

I. $2x^2 + 24x + 72 = 0$



X=- 12/2, - 12/2 = -6 and -6

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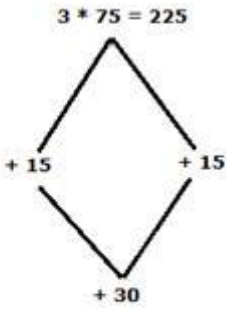
II. $3y^2 + 30y + 75 = 0$



Y=-15/3, - 15/3 = - 5 and -5

From I and II, x < y

5. Answer: E

I) $3x^2 – 3x – 36 = 0$

$3x^2 – 12x + 9x – 36 = 0$

$3x (x – 4) + 9 (x – 4) = 0$

$(3x + 9) (x – 4) = 0$

$x = -3, 4$

II) $4y^2 + 20y + 24 = 0$

$4y^2 + 8y + 12y + 24 = 0$

$4y (y + 2) + 12 (y + 2) = 0$

$(4y + 12) (y + 2) = 0$

$y = -3, -2$

Hence the relationship cannot be determined.

6. Answer: C

I) $5x^2 – 3x – 36 = 0$

$5x^2 – 15x + 12x – 36 = 0$

$5x (x – 3) + 12 (x – 3) = 0$

$(5x + 12) (x – 3) = 0$

$x = -12/5, 3 = -2.4, 3$

II) $3y^2 + 30y + 72 = 0$

$3y^2 + 18y + 12y + 72 = 0$

$3y (y + 6) + 12 (y + 6) = 0$

$(3y + 12) (y + 6) = 0$

$y = -4, -6$

x > y

7. Answer: E

I. $6x^2 – 19x + 15 = 0$

$\Rightarrow 6x^2 – 9x – 10x + 15 = 0$

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

$\Rightarrow (3x – 5)(2x – 3) = 0$

$\Rightarrow x = 5/3, 3/2$

II. $5y^2 – 34y + 24 = 0$

$\Rightarrow 5y^2 – 30y – 4y + 24 = 0$

$\Rightarrow 5y(y – 6) – 4(y – 6) = 0$

$\Rightarrow (5y – 4)(y – 6) = 0$

$\Rightarrow y = 4/5, 6$

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Hence, relationship between x and y cannot be determined.

8. Answer: B

$x^2 – 31x + 228 = 0$

$(x - 12) (x - 19) = 0$

$x = 12, 19$

$y^2 – 21y + 108 = 0$

$(y - 9) (y - 12) = 0$

$y = 12, 9$

Hence, $x \geq y$

9. Answer: C

$x^2 + 2x – 120 = 0$

$x^2 + 12x – 10x – 120 = 0$

$x(x + 12) – 10(x + 12) = 0$

$(x – 10)(x + 12) = 0$

$X = 10, -12$

$y^2 – 12y + 20 = 0$

$y^2 – 10y – 2y + 20 = 0$

$y(y – 10) – 2(y – 10) = 0$

$(y – 2)(y – 10) = 0$

$Y = 2, 10$

Relationship between x and y cannot be established.

10. Answer: A

$x^2 – 21x - 130 = 0$

$x^2 – 26x + 5x – 130 = 0$

$x(x – 26) + 5(x – 26) = 0$

$(x + 5)(x – 26) = 0$

$X = -5, 26$

$y^2 + 26y + 169 = 0$

$y^2 + 13y + 13y + 169 = 0$

$y(y + 13) + 13(y + 13) = 0$

$(y + 13)(y + 13) = 0$

$Y = -13, -13$

$x > y$

11. Answer: D

I)$x^2 + 31x + 234 = 0$

$(x + 13) (x + 18) = 0$

$x = -13, -18$

II)$y^2 + 21y + 104 = 0$

$(y + 13) (y + 8) = 0$

$y = -13, -8$

Hence, $x \leq y$

12.Answer: E

I). $8x^2 + 5x – 42 = 0$

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$8x^2 - 16x + 21x – 42 = 0$

$8x (x - 2) + 21 (x - 2) = 0$

$(8x + 21) (x – 2) = 0$

$x = -21/8, 2 = -2.625, 2$

II). $7y^2 + 43y + 60 = 0$

$7y^2 + 28y + 15y + 60 = 0$

$7y(y + 4) + 15(y + 4) = 0$

$(7y + 15) (y + 4) = 0$

$y = -15/7, -4 = - 2.14, -4$

Can't be determined

13. Answer: B

From I =>

$x^2 – 29x + 210 = 0$

$=>x(x – 14) – 15(x – 14) = 0$

$=> (x – 15) (x – 14) = 0$

$=> x = 14, 15$

From II =>

$8y^2 – 49y + 45 = 0$

$=> 8y(y – 5) – 9(y – 5) = 0$

$=> (8y – 9) (y – 5) = 0$

$=> y = 5, 9/8$

Hence, x > y

14. Answer: C

I) $4x^2 + 14x + 12 = 0$

$4x^2 + 8x + 6x + 12 = 0$

$4x (x + 2) + 6(x + 2) = 0$

$(4x + 6) (x + 2) = 0$

$X = -6/4, -2 = -1.5, -2$

II) $3y^2 + 18y + 27 = 0$

$3y^2 + 9y + 9y + 27 = 0$

$3y (y + 3) + 9 (y + 3) = 0$

$(3y + 9) (y + 3) = 0$

$Y = -9/3, -3 = -3, -3$

x > y

15. Answer: E

I) $3p^2 – 5p – 12 = 0$
$3p^2-9p+4p-12=0$

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

$p = -4/3, 3$

II)$2q^2 – 3q – 14 = 0$
$2q^2+ 4q-7q-14 =0$

$(2q-7) (q+2) = 0$
$q = -2, 7/2$
cannot be determined

16. Answer: A

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I)$2p^2 - 17p + 35 = 0$
$2p^2$-10p -7p+35 =0

(2p-7) (p-5) =0

p = 7/2, 5

II)$3q^2 - 13q + 14 = 0$

$3q^2$-6q-7q+14=0

(3q-7) (q-2) =0
q = 2, 7/3
p > q

17. Answer: D

I) $3p^2 + p - 24 = 0$
$3p^2$+9p-8p-24 =0

(3p-8) (p+3) =0

p = -3, 8/3

II)$3q^2 - 20q + 32 = 0$

$3q^2$-12q-8q+32 =0

(3q-8) (q-4) =0
q = 8/3, 4

p ≤ q

18. Answer: E

I) $6x^2$ - 19x + 15 =0

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

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

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

X= 5/3, 3/2

II) $10y^2 - 29y - 21 = 0$

$10y^2 - 35y + 6y - 21 = 0$

5y (2y-7)+3 (2y-7) =0

(5y+3) (2y-7) =0

Y= -3/5, 7/2

Can't be determined

19. Answer: A

I. $8x^2$ -22x +15 =0

$8x^2$ -12x-10x +15 =0

4x (2x-3)-5(2x-3) =0

(4x-5) (2x-3) =0

X= 5/4, 3/2

II. $3y^2$-13y +14 =0

$3y^2$-6y -7y +14 =0

3y(y-2)-7(y-2) =0

(3y-7)(y-2)=0

Y=7/3, 2

x < y

20.Answer: C

I)$x^2 - 2x - 3 = 0$

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

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$x(x - 3) + 1(x - 3) = 0$

$(x + 1)(x - 3) = 0$

$x = -1, 3$

II)$y^2 + 18y + 72 = 0$

$y^2 + 12y + 6y + 72 = 0$

$y(y + 12) + 6(y + 12) = 0$

$(y + 6)(y + 12) = 0$

$y = -6, -12$

Hence, x>y

21. Answer: D

$x^2 + 19x + 34 = 0$

$x^2 + 17x + 2x + 34 = 0$

$x(x + 17) + 2(x + 17) = 0$

$(x + 2)(x + 17) = 0$

$x = -2, -17$

$y^2 - 14y - 32 = 0$

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

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

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

$y = -2, 16$

$x \leq y$

22. Answer: A

I)$2x^2 - 28x + 96 = 0$

$2x^2 - 16x - 12x + 96 = 0$

$2x(X - 8) - 12(x - 8) = 0$

$(2x - 12)(x - 8) = 0$

$x = 6, 8$

II)$y^2 - 34y + 288 = 0$

$y^2 - 18y - 16y + 288 = 0$

$y(y - 18) - 16(y - 18) = 0$

$(y - 16)(y - 18) = 0$

$y = 16, 18$

$x < y$

23. Answer: B

$x^2 - 19x + 18 = 0$

$x^2 - 18x - x + 18 = 0$

$x(x - 18) - 1(x - 18) = 0$

$(x - 1)(x - 18) = 0$

$x = 1, 18$

$y^2 + y - 2 = 0$

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

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

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

$y = 1, -2$

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x ≥ y

24. Answer: E

I)$3x^2 + 21x + 36 = 0$

$3x^2 + 12x + 9x + 36 = 0$

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

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

$x = -4, -3$

II)$2y^2 + 18y + 36 = 0$

$2y^2 + 12y + 6y + 36 = 0$

$2y(y + 6) + 6(y + 6) = 0$

$(2y + 6)(y + 6) = 0$

$y = -3, -6$

Relationship between x and y cannot be established.

25. Answer: A

I)$3x^2 + 30x + 63 = 0$

$3x^2 + 21x + 9x + 63 = 0$

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

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

$x= -3, -7$

II)$2y^2 + 20y + 42 = 0$

$2y^2 + 14y + 6y + 42 = 0$

$2y(y + 7) + 6(y + 7) = 0$

$(2y + 6)(y + 7) = 0$

$y = -3, -7$

Relationship between x and y cannot be established.

26. Answer: E

I) $5x^2 – 14x – 55 = 0$

$5x^2 – 25x + 11x – 55 = 0$

$5x (x – 5) + 11 (x – 5) = 0$

$(5x + 11) (x – 5) = 0$

$x = -2.2, 5$

II) $4y^2 – 2y – 56 = 0$

$4y^2 – 16y + 14y – 56 = 0$

$4y (y – 4) + 14 (y – 4) = 0$

$(4y + 14) (y – 4) = 0$

$y = -3.5, 4$

Can't be determined

27.Answer: C

I) $x^2 – 30x + 81 = 0$

$(x – 27) (x - 3) = 0$

$x = 27, 3$

II) $3y^2 – 9y + 6 = 0$

$3y^2 – 6y – 3y + 6 = 0$

$3y (y – 2) – 3 (y – 2) = 0$

Quadratic Equation for SBI PO Prelims

$(3y – 3) (y – 2) = 0$

$y = 1, 2$

x > y

28. Answer: A

I) $3x^2 – 25x + 52 = 0$

$3x^2 – 12x – 13x + 52 = 0$

$3x (x – 4) – 13 (x – 4) = 0$

$(3x – 13) (x – 4) = 0$

$x = 13/3, 4 = 4.33, 4$

II) $2y^2 – 23y + 65 = 0$

$2y^2 – 10y – 13y + 65 = 0$

$2y (y – 5) – 13 (y – 5) = 0$

$(2y – 13) (y – 5) = 0$

$y = 6.5, 5$

x < y

29.Answer: E

I)$x^2 + 12x + 20 = 0$

$x^2 + 10x + 2x + 20 = 0$

$x(x + 10) + 2(x + 10) = 0$

$(x + 2)(x + 10) = 0$

$x= -2, -10$

II)$y^2 + 13y + 22 = 0$

$y^2 + 11y + 2y + 22 = 0$

$y(y + 11) + 2(y + 11) = 0$

$(y + 2)(y + 11) = 0$

$y = -2, -11$

Relationship between x and y cannot be established.

30. Answer: E

I)$2x^2 – 14x + 24 = 0$

$2x^2 – 8x – 6x + 24 = 0$

$2x(x – 4) – 6(x – 4) = 0$

$(2x – 6)(x – 4) = 0$

$x = 3, 4$

II)$y^2 – 9y – 52 = 0$

$y^2 – 13y + 4y – 52 = 0$

$y(y – 13) + 4(y – 13) = 0$

$(y + 4)(y – 13) = 0$

$y = -4, 13$

Relationship between x and y cannot be established.

31.Answer: D

I)$x^2 + 19x + 88 = 0$

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

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

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

Quadratic Equation for SBI PO Prelims

x = -8, -11

II)$y^2 + 13y + 40 = 0$

$y^2 + 8y + 5y + 40 = 0$

$y(y + 8) + 5(y + 8) = 0$

$(y + 5)(y + 8) = 0$

y = -5, -8

x ≤ y

32. Answer: E

I)$x^2 - 26x + 153 = 0$

$x^2 - 17x - 9x + 153 = 0$

$x(x - 17) - 9(x - 17) = 0$

$(x - 9)(x - 17) = 0$

x = 9, 17

II)$y^2 - 22y + 117 = 0$

$y^2 - 9y - 13y + 117 = 0$

$y(y - 9) - 13(y - 9) = 0$

$(y - 13)(y - 9) = 0$

y = 13, 9

Relationship between x and y cannot be established.

33. Answer: B

$x^2 - 22x + 105 = 0$

$x^2 - 15x - 7x + 105 = 0$

$x(x - 15) - 7(x - 15) = 0$

$(x - 7)(x - 15) = 0$

x = 7, 15

$y^2 - 12y + 35 = 0$

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

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

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

y = 5, 7

x ≥ y

34.Answer: E

I)$x^2 - 23x + 22=0$

$x^2 - 22x - x + 22=0$

$x(x - 22) - 1(x - 22)=0$

$(x - 1)(x - 22)=0$

X=1, 22

II)$y^2 + 19y - 66=0$

$y^2 + 22y - 3y - 66=0$

$y(y + 22) - 3(y + 22)=0$

$(y - 3)(y + 22)=0$

Y=3, -22

Relationship cannot be established between x and y.

Quadratic Equation for SBI PO Prelims

35. Answer: A

I. x2 - 15x + 56 = 0

x2 - 7x - 8x + 56 = 0

x(x – 7) – 8(x -7) = 0

(x-8)(x – 7) = 0

x = 7 , x = 8

II. y2 - 26y + 165 = 0

y2 – 11y-15y + 165 = 0

y(y – 11)-15(y - 11) = 0

y = 11, y= 15

so, x < y

36. Answer: E

I)x^2 + 11x + 24=0

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

x(x + 8) + 3(x + 8)=0

(x + 3)(x + 8)=0

X=-3, -8

II)y^2 + 13y + 40=0

y^2 + 8y + 5y + 40=0

y(y + 8) + 5(y + 8)=0

(y + 5) (y + 8)=0

Y=-5, -8

Relationship between x and y cannot established.

37. Answer: E

I)$2x^2$ – 18x + 36=0

$2x^2$ – 12x – 6x + 36=0

2x(x – 6) – 6(x – 6)=0

(2x – 6) (x – 6)=0

X = 3, 6

II)y^2 – 9y + 18=0

y^2 – 3y – 6y + 18=0

y(y – 3) – 6(y – 3)=0

(y – 6) (y – 3)=0

Y = 6, 3

Relationship between x and y cannot established.

38. Answer: C

x + y =45 ------(1)

x – 2y =15 ----------(2)

(1) – (2)

3y=30

y = 10

x = 45 – 10=35

Hence, x > y

39. Answer: E

Quadratic Equation for SBI PO Prelims

I)$x^2 + 18x + 80=0$

$x^2 + 10x + 8x + 80=0$

$x(x + 10) + 8(x + 10)=0$

$(x + 8)(x + 10)=0$

$x = -8, -10$

II)$y^2 + 21y + 104=0$

$y^2 + 13y + 8y + 104=0$

$y(y + 13) + 8(y + 13)=0$

$(y + 8)(y + 13)=0$

$y = -8, -13$

Relationship cannot be established between x and y.

40. Answer: D

I. $x^2 = 11449$

$x = \sqrt{11449} = \pm 107$

II. $y = \sqrt{11449} = 107$

Hence $x \leq y$

41. Answer: C

I. $4x^2 - 13x + 10 = 0$

$4x^2 - 8x - 5x + 10 = 0$

$4x (x - 2) – 5 (x - 2) = 0$

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

$x = 2, 5/4$

II. $4y^2 + 7y - 2 = 0$

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

$4y (y + 2) – 1(y + 2) = 0$

$(4y - 1) (y + 2) = 0$

$y = 1/4, -2$

Hence, x > y

42. Answer: B

I)$3p^2 + 25p + 50 = 0$

$3p^2+15p+10p+50 =0$

$(3p+10) (p+5) =0$

$p = -5, -10/3$

II)$2q^2 + 9q + 10 = 0$
$2q^2+4q+5q+10 =0$

$(2q+5) (q+2) =0$
$q = -5/2, -2$
$p < q$

43. Answer: E

$3p^2 – 4p – 4 = 0$

$3p^2-6p+2p-4 =0$

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

$p = -2/3, 2$

$3q^2 – 10q – 8 = 0$

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

Quadratic Equation for SBI PO Prelims

(3q+2) (q-4) =0
q = -2/3, 4
cannot be determined

44.Answer: B

I.$2x^2 - 7x + 6 = 0$

$\Rightarrow 2x^2 - 4x - 3x + 6 = 0$

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

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

$\Rightarrow x = 3/2, 2$

II.$y^2 + 13y + 42 = 0$

$\Rightarrow y^2 + 6y + 7y + 42 = 0$

$\Rightarrow y(y + 6) + 7(y + 6) = 0$

$\Rightarrow (y + 7)(y + 6) = 0$

$\Rightarrow y = -7, -6$

Hence, x > y

45.Answer: B

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

$\Rightarrow 2x^2 - 6x - 3x + 9 = 0$

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

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

$\Rightarrow x = 3/2, 3$

II.$8y^2 + 34y + 21 = 0$

$\Rightarrow 8y^2 + 28y + 6y + 21 = 0$

$\Rightarrow 4y(2y + 7) + 3(2y + 7) = 0$

$\Rightarrow (4y + 3)(2y + 7) = 0$

$\Rightarrow y = -3/4, -7/2$

Hence, x > y

46.Answer: B

I.$2x^2 - 13x + 15 = 0$

$\Rightarrow 2x^2 - 10x - 3x + 15 = 0$

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

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

$\Rightarrow x = 3/2, 5$

II.$3y^2 + 28y + 65 = 0$

$\Rightarrow 3y^2 + 15y + 13y + 65 = 0$

$\Rightarrow 3y(y + 5) + 13(y + 5) = 0$

$\Rightarrow (3y + 13)(y + 5) = 0$

$\Rightarrow y = -13/3, -5$

Hence, x > y

47. Answer: A

I) $x^2 + 26x - 87 = 0$

$x^2 + 29x - 3x - 87 = 0$

$x(x + 29) -3(x + 29) = 0$

$(x + 29) (x - 3) = 0$

$x = -29, 3$

Quadratic Equation for SBI PO Prelims

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

Hence, x < y

48. Answer: D

I) x^2 + 14x – 51 = 0

x^2 + 17x – 3x – 51 = 0

x(x + 17) -3(x + 17) = 0

(x – 3) (x + 17) = 0

x = 3, -17

II) y^2 – 8y + 15 = 0

y^2 – 5y – 3y + 15 = 0

y(y – 5) -3(y – 5) = 0

(y – 3) (y – 5) = 0

y = 3, 5

Hence, x ≤ y

49.Answer: C

From I =>

$2x^2$ – 13x + 20 = 0

=> (2x – 5) (x – 4) = 0

=> x = 5/2, 4

From II =>

$2y^2$ – 17y + 36 = 0

=> (2y – 9) (y – 4) = 0

=> y = 9/2, 4

Hence, x ≤ y

50. Answer: A

I)x^2 – 13x – 114 = 0

x^2 + 6x – 19x – 114 = 0

x(x + 6) – 19(x + 6) = 0

(x – 19)(x + 6) = 0

x = 19, -6

II)y^2 + 21y + 104 = 0

y^2 + 8y + 13y + 104 = 0

y(y + 8) + 13(y + 8) = 0

(y + 13)(y + 8) = 0

y = -13, -8

Hence, x > y

Quadratic Equation for SBI PO Prelims