Quadratic Equation Questions for IBPS Clerk Pre, SBI Clerk Pre and IBPS RRB.

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 ≤ y   C. if x > y   D. if x ≥ 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 ≥ y   D. if x ≤ 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 ≤ y   C. if x ≥ 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 ≤ y   C. if x ≥ 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 ≤ y   C. if x ≥ 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 ≤ y   C. if x ≥ 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 ≤ y   C. if x ≥ 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   B. if x ≥ y   C. if x < y   D. if x ≤ y
E. if x = y or relationship between x and y can't be established

9. I. $x^2 - 8x + 15 = 0$ II. $y^2 - 12y + 36 = 0$

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 can't be established

10. I. $x^2 + 9x + 20 = 0$ II. $y^2 = 16$

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 can't be established

11. I. $x^2 + (343)^{1/3} = 56$ II. $(y)^{4/3} \times (y)^{5/3} - 295 = 217$
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 can't be established

12. I. $5x + 4y = 8$ II. $3x + 2y = 4$

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 can't be established

13. I. $x^2 + 8 = 6x$ II. $y^2 + 15 = 8y$

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 can't be established

14. I. $\sqrt{49} + \sqrt{x + 15} = \sqrt{169}$ II. $y^2 - 212 = 364$

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 can't be established

15. I. $x^2 - \dfrac{(10)^{5/2}}{\sqrt{x}} = 0$ II. $\dfrac{18}{\sqrt{y}} - \sqrt{y} = \dfrac{7}{\sqrt{y}}$

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 can't be established

16. I. $2x^2 + 7x + 5 = 0$ II. $3y^2 + 5y + 2 = 0$

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 can't be established

17. I. $2x^2 - 13x + 21 = 0$ II. $3y^2 - 14y + 15 = 0$

A. if x > y B. if x ≤ y C. if x ≥ y D. if x < y
E. if x ≤ y or no relationship can be established between x and y.

18.   **I. $2x^2 - 13x + 18 = 0$**   **II. $y^2 - 7y + 12 = 0$**

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 can't be established

19.   **I. $x^2 + 6x + 9 = 0$**   **II. $y^2 - y - 20 = 0$**

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 can't be established

20.   **I. $3x^2 - 10x + 8 = 0$**   **II. $2y^2 - 19y + 35 = 0$**

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 can't be established

21.   **I. $x^2 - 3 = 2x$**   **II. $y^2 + 5y + 6 = 0$**

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 can't be established

22.   **I. $x^2 - 25x + 114 = 0$**   **II. $y^2 - 10y + 24 = 0$**

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 can't be established

23.   **I. $\dfrac{4}{\sqrt{x}} + \dfrac{6}{\sqrt{x}} = 5\sqrt{x}$**   **II. $y^2 + \sqrt{256} = \sqrt{625}$**

A. if x > y   B. if x < y   C. if x ≤ y
D. if x = y or relationship between x and y can't be established

24.   **I. $x^2 - 7\sqrt{3}\,x + 36 = 0$**   **II. $y^2 - 11\sqrt{3}\,y + 84 = 0$**

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 can't be established

25.   **I. $x^2 = 361$**   **II. $y^3 = 7269 + 731$**

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 can't be established

26.   **I. $x^2 + 5x + 6 = 0$**   **II. $y^2 - 4y - 12 = 0$**

A. if x > y   B. if x ≤ y   C. if x ≥ y
D. if x = y or relationship between x and y can't be established   E. if x < y

27. I. $25x^2 - 90x + 72 = 0$ II. $y^2 + 26y + 168 = 0$

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 can't be established

28. I. $3x^2 - 8x - 16 = 0$ II. $3y^2 - 19y + 28 = 0$

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 can't be established

29. I. $12x^2 - 4x - 5 = 0$ II. $8y^2 - 4y - 4 = 0$

A. if x > y   B. if x < y   C. if x = y   D. if x ≥ y
E. if x ≤ y or no relationship can be established between x and y.

30. I. $6x^2 - 13x - 44 = 0$ II. $4y^2 - 17y - 42 = 0$

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 can't be established

31. I. $3x + 5y = 34.5$ II. $4x - 9y = -1$

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 can't be established

32. I. $35x^2 + 4x - 63 = 0$ II. $7y^2 - 4y - 20 = 0$

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 can't be established

33. I. $x^2 - 1089 = 0$ II. $3y^2 - 363 = 0$

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 can't be established

34. I. $x^2 - 4\sqrt{7}x + 21 = 0$ II. $2y^2 - 8\sqrt{5}y - 50 = 0$

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 can't be established

CORRECT OPTIONS:

1	2	3	4	5	6	7	8	9	10
E	A	B	E	E	E	A	D	C	D
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
D	D	E	E	D	B	C	E	E	D
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
A	C	D	B	A	B	A	E	E	E
31	**32**	**33**	**34**						
A	E	E	E						

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.** $15x^2 + x - 6 = 0$
$15x^2 + 10x - 9x - 6 = 0$
$5x (3x + 2) - 3 (3x + 2) = 0$
$(5x - 3) (3x + 2) = 0$
$x = \dfrac{3}{5}, -\dfrac{2}{3}$

II. $5y^2 - 23y + 12 = 0$
$5y^2 - 20y - 3y + 12 = 0$
$5y (y - 4) - 3 (y - 4) = 0$
$(y - 4) (5y - 3) = 0$
$y = 4, \dfrac{3}{5}$

$x \leq y$
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.** $x^2 - 8x - 20 = 0$
$\Rightarrow x^2 - 10x + 2x - 20 = 0$
$\Rightarrow x(x - 10) + 2(x - 10) = 0$
$\Rightarrow (x - 10)(x + 2) = 0$
Then, $x = + 10$ or $x = -2$

II. $3y^2 - 60y + 297 = 0$
$\Rightarrow y^2 - 20y + 99 = 0$ [Dividing both sides by 3]
$\Rightarrow y^2 - 11y - 9y + 99 = 0$
$\Rightarrow y(y - 11) - 9(y - 11) = 0$
$\Rightarrow (y - 11)(y - 9) = 0$
Then, $y = + 11$ 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 $y = + 9$

∴   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. $2x^2 + 9x + 7 = 0$

or, $2x^2 + 2x + 7x + 7 = 0$

or, $2x(x + 1) + 7 (x + 1) = 0$

or, $(2x + 7) (x + 1) = 0$

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

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

or, $y^2 + 2y + 2y + 4 = 0$

or, $y (y + 2) + 2 (y + 2) = 0$

or, $(y + 2)(y + 2) = 0$

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

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

Therefore, Option E is correct.

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

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

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

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

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

$\therefore \quad x = 3, 4$

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

or, $3y^2 - 6y - 5y + 10 = 0$

or, $3y(y - 2) - 5(y - 2) = 0$

or, $(3y - 5)(y - 2) = 0$

$\therefore \quad y = 2, \dfrac{5}{3}$

Hence, x > y

Hence, option A is correct.

8.   I. $2x^2 + 15x + 28 = 0$
or, $2x^2 + 8x + 7x + 28 = 0$
or, $2x (x + 4) + 7 (x + 4) = 0$
or, $(2x + 7) (x + 4) = 0$

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

II. $2y^2 + 13y + 21 = 0$
or, $2y^2 + 6y + 7y + 21 = 0$
or, $2y (y + 3) + 7 (y + 3) = 0$
or, $(2y + 7) (y + 3) = 0$

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

Hence, $x \leq y$.
Therefore, Option D is the correct answer.

9.   I. $x^2 - 8x + 15 = 0$
or, $x^2 - 5x - 3x + 15 = 0$
or, $x (x - 5) - 3 (x - 5) = 0$
or, $(x - 5) (x - 3) = 0$
$\therefore x = 5, 3$

II. $y^2 - 12y + 36 = 0$
or, $y^2 - 6y - 6y + 36 = 0$
or, $y(y - 6) - 6 (y - 6) = 0$
or, $(y - 6) (y - 6) = 0$
$\therefore \quad y = 6, 6$

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

10.   I. $x^2 + 9x + 20 = 0$
or, $x^2 + 4x + 5x + 20 = 0$
or, $x (x + 4) + 5 (x + 4) = 0$
or, $(x + 4) (x + 5) = 0$
$x = -4, -5$

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.

11. I. $x^2 + (343)^{1/3} = 56$

$x^2 + 7 = 56$

$x^2 = 49$

$\therefore \ x = \sqrt{49} = \pm 7$

II. $(y)^{4/3} \times (y)^{5/3} - 295 = 217$

$(y)^3 = 217 + 295$

$(y)^3 = 512 = (8)^3$

or, $y = 8$

Here, $x < y$

Hence, option D is correct.

12. $5x + 4y = 8$ ....(i) × 3

$3x + 2y = 4$ ....(ii) × 5

$15x + 12y = 24$ ....(iii)

$15x + 10y = 20$ ....(iv)

$\underline{-\quad-\quad-}$

$\qquad 2y = 4$

$\qquad \ y = 2$

Putting the value of y in (i), we get

$5x + 8 = 8$

$5x = 0$

$\therefore x = 0$

Here, $x < y$

Hence, option D is correct.

13. **I.** $x^2 + 8 = 6x$

$x^2 - 6x + 8 = 0$

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

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

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

$\therefore x = 2, 4$

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

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

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

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

$y = 3, 5$

Here, while comparing the root values of x and y, we find that one root value of y lies between the value of x. Therefore, no relationship between x and y can be established

Hence, option E is correct.

14. **I.** $\sqrt{49} + \sqrt{x + 15} = \sqrt{169}$

$7 + \sqrt{x + 15} = 13$

$(\sqrt{x + 15})^2 = (6)^2$

$x + 15 = 36$

$\therefore x = 36 - 15 = 21$

II. $y^2 - 212 = 364$

$y^2 = 364 + 212$

$y^2 = 576$

$y = \pm 24$

Here, relationship between x and y cannot be established

Hence, option E is correct.

15.

I. $x^2 - \dfrac{(10)^{5/2}}{\sqrt{x}} = 0$

$x^{2+1/2} - (10)^{5/2} = 0$

$(x)^{5/2} = (10)^{5/2}$

$x = 10$

II. $\dfrac{18}{\sqrt{y}} - \sqrt{y} = \dfrac{7}{\sqrt{y}}$

$18 - y = 7$

$y = 11$

Here, $x < y$

Hence, option D is correct.

16. **I.** $2x^2 + 7x + 5 = 0$
$\Rightarrow 2x^2 + 2x + 5x + 5 = 0$
$\Rightarrow 2x (x + 1) + 5 (x + 1) = 0$
$\Rightarrow (2x + 5) (x + 1) = 0$
$x = -2.5, -1$

II. $3y^2 + 5y + 2 = 0$
$\Rightarrow 3y^2 + 3y + 2y + 2 = 0$
$\Rightarrow 3y (y + 1) + 2 (y + 1) = 0$
$\Rightarrow (3y + 2) (y + 1) = 0$
$y = -0.66, -1$

For $x = -2.5$ and $y = -0.66, -1$ $x < y$

For $x = -1$ and $y = -0.66, -1$ $x \le y$

Hence x is either less than or equal to y.

Hence, option B is correct.

17. **I.** $x^2 + 6x - 112 = 0$
$x^2 + 14x - 8x - 112 = 0$
$x (x + 14) - 8(x + 14) = 0$
$(x + 14)(x - 8) = 0$
$x = 8, -14$

II. $y^2 + 22y + 112 = 0$
$y^2 + 8y + 14y + 112 = 0$
$y(y + 8) + 14(y + 8) = 0$
$(y + 8)(y + 14) = 0$
$y = -8, -14$

For, $x = -14$ and $y = -8$
$x < y$

For, $x = -14$ and $y = -14$
$x = y$

But for $x = 8$ and $y = -8$ and -14
$x > y$

Therefore, relationship can't be established

Hence, option E is correct.

18. **I.** $2x^2 - 13x + 18 = 0$
$\Rightarrow 2x^2 - 4x - 9x + 18 = 0$
$\Rightarrow 2x (x - 2) - 9 (x - 2) = 0$
$\Rightarrow (2x - 9) (x - 2) = 0$
$x = 4.5, \ 2$

II. $y^2 - 7y + 12 = 0$
$\Rightarrow y^2 - 4y - 3y + 12 = 0$
$\Rightarrow y (y - 4) - 3 (y - 4) = 0$
$\Rightarrow (y - 3) (y - 4) = 0$
$y = 4, 3$
For $x = 4.5$ and $y = 4, 3$ $x > y$

For $x = 2$ and $y = 4, 3$ $x < y$

Hence, no relationship can be established

Hence, option E is correct.

19. I. $x^2 + 6x + 9 = 0$

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

$\Rightarrow x(x + 3) + 3(x + 3) = 0$

$\Rightarrow (x + 3)(x + 3) = 0$

$x = -3, -3$

II. $y^2 - y - 20 = 0$

$\Rightarrow y^2 - 5y + 4y - 20 = 0$

$\Rightarrow y(y - 5) + 4(y - 5) = 0$

$\Rightarrow (y + 4)(y - 5) = 0$

$y = -4, 5$

For $x = -3$ and $y = -4$, $x > y$

For $x = -3$ and $y = 5$, $x < y$

Hence, no relationship can be established

Hence, option E is correct.

20. I. $3x^2 - 10x + 8 = 0$

$\Rightarrow 3x^2 - 6x - 4x + 8 = 0$

$\Rightarrow 3x(x - 2) - 4(x - 2) = 0$

$\Rightarrow (3x - 4)(x - 2) = 0$

$x = 4/3, 2$

II. $2y^2 - 19y + 35 = 0$

$\Rightarrow 2y^2 - 14y - 5y + 35 = 0$

$\Rightarrow 2y(y - 7) - 5(y - 7) = 0$

$\Rightarrow (2y - 5)(y - 7) = 0$

$y = 2.5, 7$

Hence, $x < y$

Hence, option D is correct.

21. I. $x^2 - 3 = 2x$

∴ $x^2 - 2x - 3 = 0$

∴ $x^2 - 3x + x - 3 = 0$

∴ $(x + 1)(x - 3) = 0$

∴ $x = 3$ or $x = -1$

II. $y^2 + 5y + 6 = 0$

∴ $y^2 + 3y + 2y + 6 = 0$

∴ $(y + 3)(y + 2) = 0$

∴ $y = -3$ or $y = -2$

For both values of x, $x > y$

Hence, option A is correct

22. I. $x^2 - 25x + 114 = 0$

∴ $x^2 - 19x - 6x + 114 = 0$

∴ $(x - 6)(x - 19) = 0$

∴ $x = 19$ or $x = 6$

II. $y^2 - 10y + 24 = 0$

∴ $y^2 - 6y - 4y + 24 = 0$

∴ $(y - 4)(y - 6) = 0$

∴ $y = 6$ or $y = 4$

When $x = 19$, $x > y$

When $x = 6$, $x \geq y$

Hence, $x \geq y$

Hence, option C is correct.

23. 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 = ± 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.

24. I. $x^2 - 7\sqrt{3}\,x + 36 = 0$

$\Rightarrow x^2 - 4\sqrt{3}\,x - 3\sqrt{3}\,x + 36 = 0$

$\Rightarrow x\,(x - 4\sqrt{3}) - 3\sqrt{3}\,(x - 4\sqrt{3}) = 0$

$\Rightarrow (x - 3\sqrt{3})\,(x - 4\sqrt{3}) = 0$

$\therefore x = 3\sqrt{3},\ 4\sqrt{3}$

II. $y^2 - 11\sqrt{3}\,y + 84 = 0$

$\Rightarrow y^2 - 4\sqrt{3}\,y - 7\sqrt{3}\,y + 84 = 0$

$\Rightarrow y\,(y - 4\sqrt{3}) - 7\sqrt{3}\,(y - 4\sqrt{3}) = 0$

$\Rightarrow (y - 7\sqrt{3})\,(y - 4\sqrt{3}) = 0$

$\therefore y = 7\sqrt{3},\ 4\sqrt{3}$

Now, While comparing the root values of x and y

x		y
3√3	<	4√3
3√3	<	7√3
4√3	=	4√3
4√3	<	7√3

Here, x ≤ y
Hence, option (B) is correct.

25. I. $x^2 = 361$

$x = \pm 19$

II. $y^3 = 7269 + 731$

$y^3 = 8000$

$y = 20$

$x < y$

Hence, option A is correct.

26. I. $x^2 + 5x + 6 = 0$

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

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

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

$\therefore x = -2, -3$

II. $y^2 - 4y - 12 = 0$

$\Rightarrow y^2 - 6y + 2y - 12 = 0$

$\Rightarrow y (y - 6) + 2 (y - 6) = 0$

$\Rightarrow (y + 2) (y - 6) = 0$

$\therefore y = -2, +6$

Now, While comparing the root values of x and y

  x   y

$-2 = -2$

$-2 < +6$

$-3 < -2$

$-3 < +6$

Here, $x \leq y$

Hence, option (B) is correct.

27. I. $25x^2 - 90x + 72 = 0$
$\Rightarrow (5x - 6)(5y - 12) = 0$
$\Rightarrow x = \dfrac{6}{5}, \dfrac{12}{5}$

II. $y^2 + 26y + 168 = 0$
$\Rightarrow (y + 12)(y + 14) = 0$
$\Rightarrow y = -12, -14$

Hence, $x > Y$

Hence, option A is correct.

28. I. $3x^2 - 8x - 16 = 0$
$\Rightarrow (3x + 4)(x - 4) = 0$
$\Rightarrow x = -\dfrac{4}{3}, 4$

II. $3y^2 - 19y + 28 = 0$
$\Rightarrow (3y - 7)(y - 4) = 0$
$\Rightarrow y = \dfrac{7}{3}, 4$

Hence, relationship between x and y cannot be determined.

Hence, option E is correct.

29. I. $12x^2 - 4x - 5 = 0$
$\Rightarrow 12x^2 - 10x + 6x - 5 = 0$
$\Rightarrow 6x(2x + 1) - 5(2x + 1) = 0$
$\Rightarrow (6x - 5)(2x + 1) = 0$
$\therefore x = \dfrac{5}{6} \text{ or } \dfrac{-1}{2}$

II. $8y^2 - 4y - 4 = 0$
$\Rightarrow 8y^2 - 8y + 4y - 4 = 0$
$\Rightarrow 8y(y - 1) + 4(y - 1) = 0$
$\Rightarrow (8y + 4)(y - 1) = 0$
$\therefore y = \dfrac{-1}{2} \text{ or } y = 1$

So, here we can't say anything.
Hence, option E is correct.

30. **I.** $6x^2 - 13x - 44 = 0$

$6x^2 - 24x + 11x - 44 = 0$

$6x(x - 4) + 11(x - 4) = 0$

$(6x + 11)(x - 4) = 0$

$x = 4, -\dfrac{11}{6}$

II. $4y^2 - 17y - 42 = 0$

$4y^2 - 24y + 7y - 42 = 0$

$4y(y - 6) + 7(y - 6) = 0$

$(4y + 7)(y - 6) = 0$

$y = 6, -\dfrac{7}{4}$

Hence Relationship cannot be established.

Therefore, option E is correct.

31. Multiplying equation (I) by 4 and equation (II) by 3 we get,

$12x + 20y = 138$

$12x - 27y = -3$

Subtracting both equations:

$47y = 141$

$y = 3$

$4x - 9y = -1$

$4x - 9(3) = -1$

$4x - 27 = -1$

$4x = 27 - 1$

$4x = 26$

$x = \dfrac{26}{4} = \dfrac{13}{2}$

$x > y$

Hence, option A is correct.

32. I. $35x^2 + 4x - 63 = 0$
$35x^2 + 49x - 45x - 63 = 0$
$7x(5x + 7) - 9(5x + 7) = 0$
$(7x - 9)(5x + 7) = 0$

$x = \dfrac{9}{7}, -\dfrac{7}{5}$

II. $7y^2 - 4y - 20 = 0$
$7y^2 - 14y + 10y - 20 = 0$
$7y(y - 2) + 10(y - 2) = 0$
$(y - 2)(7y + 10) = 0$

$y = 2, -\dfrac{10}{7}$

Therefore, relationship can't be established

Hence, option E is correct.

33. I. $x^2 - 1089 = 0$,
$x = \pm33$

II. $3y^2 - 363 = 0$,
$3y^2 = 363$,
$y^2 = 121$
$y = \pm11$

Therefore, relationship cannot be established

Hence, option E is correct.

34. I. $x^2 - 4\sqrt{7}x + 21 = 0$

$\Rightarrow x^2 - \sqrt{7}x - 3\sqrt{7}x + 21 = 0$

$\Rightarrow x(x - \sqrt{7}) - 3\sqrt{7}(x - \sqrt{7}) = 0$

$\Rightarrow (x - \sqrt{7})(x - 3\sqrt{7}) = 0$

$\Rightarrow x = \sqrt{7}, 3\sqrt{7}$

II. $2y^2 - 8\sqrt{5}y - 50 = 0$
$\Rightarrow 2y^2 - 8\sqrt{5}y - 50 = 0$
Taking 2 as a common term, we get
$\Rightarrow y^2 - 4\sqrt{5}y - 25 = 0$
$\Rightarrow y^2 + \sqrt{5}y - 5\sqrt{5}y - 25 = 0$
$\Rightarrow y(y + \sqrt{5}) - 5\sqrt{5}(y + \sqrt{5}) = 0$
$\Rightarrow (y + \sqrt{5})(y - 5\sqrt{5}) = 0$
$\Rightarrow y = -\sqrt{5}, 5\sqrt{5}$

While comparing the root values of x and y, we find that root values of y lies between the x's root values.

Therefore, relationship between x and y can't be determined.
Hence, option E is correct.