QUADRATIC EQUATION
SHORT TRICKS &
QUESTIONS WITH
SOLUTIONS

BY

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**QUADRATIC EQUATION**

The quadratic equation is very important for all competitive exams generally 4-5 questions come from this topic in maximum exams. So we are here providing you the concepts and important short tricks to solve quadratic equation in very fast and efficient way. At the end, we will provide few practice questions also apply the trick on those and see that you have got the trick or not.

So the first thing that comes to our mind is what is a quadratic equation.

The Equation that is in the form of \(a(x)^2 + bx + c = 0\) is known as a quadratic equation.

where \(x\) represents an unknown, and \(a, b,\) and \(c\) represent known numbers such that \(a\) is not equal to 0. If \(a = 0\), then the equation is linear, not quadratic. The numbers \(a, b,\) and \(c\) are the coefficients of the equation and may be distinguished by calling them, respectively, the quadratic coefficient, the linear coefficient, and the constant or free term.

In the equation, we have two equation in quadratic form and we have to find their roots and compare them.

Let the roots be as \(x_1, x_2, y_1, y_2\) and then we can compare them by following method.

It means we compare ‘\(x\)’ with both factors of ‘\(y\)’ i.e. \(y_1, y_2\), then \(x_2\) with both the factors of ‘\(y\)’ and answer according to it. We use the sign in the equation to find the sign of roots.

<table>
<thead>
<tr>
<th>Sign of coefficient of ‘(x)’</th>
<th>Sign of coefficient of ‘(y)’</th>
<th>Signs of roots</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>+</td>
<td>-</td>
<td>+</td>
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</tbody>
</table>

**Example**

\[x^2 - 7x + 12 = 0\]
\[y^2 + y - 20 = 0\]

By using table, Roots are

\[x_1 = 4\]
\[x_2 = 3\]
\[y_1 = -5\]
\[y_2 = 4\]

In this case we can see that \(X_2 > Y_1\)

\[X_1 = X_2 \& Y_2 > X_2\]
So we cannot determine the relationship so answer will be CND (cannot determine).
Below is the chart where you can directly answer after getting the roots.

<table>
<thead>
<tr>
<th>X1</th>
<th>X2</th>
<th>Y1</th>
<th>Y2</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1</td>
<td>+5</td>
<td>+4</td>
<td>+2</td>
<td>-1</td>
</tr>
<tr>
<td>Case 2</td>
<td>+5</td>
<td>+4</td>
<td>+4</td>
<td>+1</td>
</tr>
<tr>
<td>Case 3</td>
<td>+3</td>
<td>+4</td>
<td>+4</td>
<td>+1</td>
</tr>
<tr>
<td>Case 4</td>
<td>+3</td>
<td>+5</td>
<td>+5</td>
<td>+7</td>
</tr>
<tr>
<td>Case 5</td>
<td>+9</td>
<td>+6</td>
<td>+7</td>
<td>+4</td>
</tr>
<tr>
<td>Case 6</td>
<td>+4</td>
<td>+7</td>
<td>+9</td>
<td>+6</td>
</tr>
<tr>
<td>Case 7</td>
<td>+8</td>
<td>+5</td>
<td>+4</td>
<td>+8</td>
</tr>
<tr>
<td>Case 8</td>
<td>+8</td>
<td>+4</td>
<td>+5</td>
<td>+8</td>
</tr>
</tbody>
</table>

In some special cases by using sign of quadratic equation, we can answer directly just comparing signs of roots by using table

**Type 1:** If one equation have sign “-,” “+,” and other has “+,” “+,”

**Type 2:** If both equations have sign “+,” “-.”

**Type 3:** If both equations have sign “-,” “-.”

**Type 4:** If one equation have sign “+,” “-.” and other has sign “+,” “-.”

**Type 1:** When one equation has positive roots and other equation has negative roots the answer will be roots of the positive equation is greater than negative ones.

**Example:** $x^2 - 7x + 10 = 0$

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

By just comparing sign of equation by sign root using table

Here Roots are $+x_1$, $+x_2$, $-y_1$, $-y_2$

So, we can see that both roots of “x” are positive & roots of “y” is negative.

Therefore $X > Y$

**Type 2:** In this type of equation, roots of the equation is positive & negative. Here by comparing the roots i.e. $x_2$ is greater than $y_1$ & $x_1$ is less than $y_2$ so we cannot determine the answer, the answer will be CND.

**Example:** $x^2 + x - 56 = 0$

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

By just comparing sign of equation by sign root using table

Roots are $-x_1$, $+x_2$, $-y_1$, $+y_2$

Here $x_2 > -y_1$ & $-x_1 < +y_2$

Therefore answer is CND (Cannot determine)

**Type 3:** In this type of equation, roots of the equation is positive & negative. Hereby comparing the roots i.e. $x_1$ is greater than $y_2$ & $x_2$ is less than $y_1$ so we cannot determine the answer, the answer will be CND.

**Example:** $x^2 - x - 6 = 0$

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

By just comparing sign of equation by sign root using table
Roots are +x1, -x2, +y1, -y2

Here +X1 > -Y2 & -X2 < +Y1

Therefore answer is CND (Cannot determine)

**Type 4:** In these type of equations, roots of the equation is positive & negative. Hereby comparing the roots i.e. x2 is greater than y2 & x1 is less than y1 so we cannot determine the answer, the answer will be CND.

**Example:** x^2 + x - 56 = 0

20(y)^2 – y - 12 = 0

By just comparing sign of equation by sign root using table

Roots are -x1, +x2, +y1, -y2

Here X1 < Y1 & X2 > Y2

Therefore relation cannot be established so the answer is CND.

**Directions:** In the following questions, two equations numbered are given in variables x and y. You have to solve both the equations and find out the relationship between x and y. Then give answer accordingly:

(i) p^2 – 5p +6 = 0

(ii) q^2 -2q+1 = 0

**Ans : = A**

Roots are p = +3, +2
q = +l, +1

Here p > q

(ii) 15p^2 + 5p + 1 = 0

(ii) 2q^2 + 10q - 48 = 0

1. If p > q
2. If p < q
3. If p ≥ q
4. If p ≤ q
5. If p = q or relation cannot be established

**Ans : = E**

Roots are p = -0.2, -0.33
q = -8, +3

Here no relations are formed between p & q

(iii) 6p^2 + p - 1 = 0

8q^2 + 10q + 3 = 0

1. If p > q
2. If p < q
3. If p ≥ q
4. If p ≤ q
5. If p = q or relation cannot be established

**Ans : = C**

Roots are p = -0.5, 0.33
q= -0.75, -0.5

Here roots of p are greater than equal to q.
iv) \(4p^2 - 9p - 9 = 0\)

(ii) \(3q^2 + 2q - 21 = 0\)

1. If \(p > q\)
2. If \(p < q\)
3. If \(p \geq q\)
4. If \(p \leq q\)
5. If \(p = q\) or relation cannot be established

Ans : E

Roots are \(p = -0.75, 3\)
\(q = -3, 2.3\)

Here no relations are formed between \(p\) & \(q\)

Most people dislike absolute value, and inequalities can tie us up into knots. Put them together, and we can have some major headaches! Let’s test one out.

Set your timer for 1 minute and 15 seconds for this Quantitative Comparison problem and GO!

\[|x - 3.5| < 1.5\]

What did you get? (Do you remember the 4 QC answer choices? I didn’t list them above! If you don’t know what they are, go look them up. I’ll wait. And the pain of having to look them up will help convince you that you need to memorize these.)

We have a given:

\[|x - 2| > 3\]

So, first, let’s figure out what this actually means. For what values of \(x\) is this inequality true?

When an inequality or an equation contains an absolute value sign, we have to think of this as two equations (or inequalities). The first one is the actual inequality that we were given, without the absolute value sign:

\[x - 2 > 3\]

The second one is the negative of the first one. Choose one side (it doesn’t matter which one, but it’s easiest to choose whichever side is simpler) and make it negative. If you have an equation (= sign), then that’s all you need to do. If you have an inequality, though, then things are a bit more complicated. With inequalities, we also have to reverse the direction of the inequality (think of it as multiplying by a negative). So, in the above case, we would get this:

\[x - 2 < -(3)\]
You’ll notice that I put parentheses around the 3. I don’t really need to do that in this case, because it’s only a 3, but this could make a difference on a different problem, so it’s a good idea to get into the habit of including parentheses, just in case.

All right, we have these two equations:

1. \( x - 2 > 3 \)
2. \( x - 2 < -(3) \)

Simplify each one. 1. \( x - 2 > 3 \) becomes \( x > 5 \). And 2. \( x - 2 < -(3) \) becomes \( x < -1 \). The original equation, then, is telling us that \( x \) could be greater than 5 or less than -1.

Because we’re dealing with absolute value in general, it might be useful to illustrate this on a number line (particularly because, if we glance at Quantities A and B, we can see that we’re not done with absolute value yet!). Our number line will include 0 not only because we always include 0 on number lines but also because the question is about absolute value—which means negative vs. non-negative is a key issue here.

What does absolute value mean again? Absolute value turns negative numbers positive (or, in the case of 0, leaves the number the same). Absolute value is really telling us the distance a number is from zero on the number line, regardless of direction. What’s the closest possibility for \( x \)? On the -1 side, \( x \) could be just a bit more than 1 unit away from zero.

Take any number in the world and put an absolute value symbol around it. What’s the smallest possible value you can think of, once the absolute value symbol has been applied?

Right. Zero. The absolute value of zero is zero. The absolute value of anything else is at least a tiny bit bigger than zero, because absolute value gets rid of any negative signs. So the smallest possible value for anything inside an absolute value symbol is zero.

Now, why did I ask you that? Take a look at Quantity A:

The minimum possible value of \( | x - 3.5 | \)

I asked you that because that’s what the problem wants me to find: the minimum possible value once that absolute value sign has been applied. Can we make it come out to zero? What would \( x \) have to be in order for the overall value to be zero?

The value of \( x \) would have to be 3.5. Now, I know I can’t make \( x = 3.5 \) because, glancing at my number line, I can see that \( x \) has to be bigger than 5 or smaller than -1. Of the possible values for \( x \), which is closest to 3.5?

We should look at the line that start at a little bit bigger than 5. What if we plug in this value?

\[ |\text{slightly bigger than 5} - 3.5| \]
Do the math but keep the “slightly bigger than” language: that would equal something $|\text{slightly bigger than 1.5}|$ or $> 1.5$. The value in Quantity A, then, is something just slightly bigger than 1.5.

What about Quantity B? Use the same thought process. In order for the value of $|x - 1.5|$ to be zero, $x$ would have to be 1.5. It can’t be 1.5, but what’s the closest possible value that it can be? In this case, we need to go in the other direction: 1.5 is closer to -1 than it is to +5.

This time, we’re doing this math:

$|\text{slightly smaller than -1 — 1.5}|$

$|\text{slightly smaller than -2.5}|$

Now here’s a weird little twist: I know I’m going to drop the negative sign since I’ve got an absolute value symbol, right? Think of this as dividing by a negative: we also need to flip the inequality sign. So this becomes: slightly larger than +2.5 or $> 2.5$.

Which is the larger value? Quantity B. The correct answer is B.

Now, you might look at all of that and think, I can’t think it through like that. I’d mess that up. If so, that’s okay. Here’s another (slightly longer) way to approach it. You’ll have to test more cases, but you might find the process more straightforward.

Do everything the same up to the point where we began examining Quantity A. We know that $x > 5$ and $x < -1$, and we’ve drawn our number line. Then test both ends of the possible ranges (slightly less than -1 and slightly more than 5) for both Quantity A and Quantity B.

First, try the -1 end of the range. $x < \mid -1 — 3.5 \mid < \mid -4.5 \mid$. Next, apply the absolute value symbol. If $x < \mid -4.5 \mid$, then applying the absolute value symbol gives us $x > +4.5$ (remember, we flip both the sign and the inequality symbol). Next, try 5: $x > \mid 5 — 3.5 \mid > \mid 1.5 \mid$. We don’t need to flip the sign this time because the number is already positive. $x > 1.5$. Here’s how it would look on the number line.

So for Quantity A, the smallest possible value (the one closest to zero) is something just a bit bigger than 1.5. Now, do the same thing for Quantity B: test both ends of the range.

This time, we’ve got $x < \mid -1 — 1.5 \mid < \mid -2.5 \mid$. Applying the absolute value symbol to this negative value, we get $x > 2.5$. The other possibility is $x > \mid 5 — 1.5 \mid > \mid 3.5 \mid$, or $x > 3.5$. In this case, the smallest possible value (the one closest to zero) is something just a bit bigger than 2.5, so Quantity B is greater and the answer is B.
Key Takeaways for Inequality and Absolute Value Problems

(1) Equations or inequalities containing absolute value symbols actually represent two different equations (or inequalities), not just one. Make sure that you’re solving for both!

(2) If you have an inequality inside of an absolute value symbol (as we did when we tested possible values here), you have to flip the sign when the value of the number is negative—just as we would if we were solving a normal inequality.

(3) Try drawing things out. Absolute value problems are really about negative vs. non-negative, so a number line will often help to sort out what the problem is really telling/really asking
Quadratic Equation Questions

Directions (Q. 1-5): Two equations (I) and (II) are given in each question. On the basis of these equations you have to decide the relation between ‘x’ and ‘y’ and give answer.

1. if x > y
2. if x < y
3. if x ≥ y
4. if x ≤ y
5. if x = y or no relation can be established between ‘x’ and ‘y’.

1. I. 6x^2 - 19x + 15 = 0 
   II. 10y^2 - 29y + 21 = 0
2. I. 12x^2 + 11x - 56 = 0 
   II. 4y^2 - 15y + 14 = 0
3. I. 3x^2 + 13x + 12 = 0 
   II. y^2 + 9y + 20 = 0
4. I. 8x^2 - 15x + 7 = 0 
   II. 2y^2 - 7y + 6 = 0
5. I. 7x - 3y = 13 
   II. 5x + 4y = 40

Directions (Q. 6-10): In the following questions, two equations numbered I and II are given. You have to solve both the equations and give answer

1. if x > y
2. if x < y
3. if x ≥ y
4. if x ≤ y
5. if x = y or no relation can be established between ‘x’ and ‘y’.

6. I. 2x^2 - 11x + 15 = 0 
   II. 21y^2 - 23y + 6 = 0
7. I. 5x^2 - 16x + 11= 0 
   II. 5y^2 - 3y - 2 = 0
8. I. x^2 + 11x + 28 = 0 
   II. 2y^2 + 13y + 20 = 0
9. I. 6x^2 + 29x + 35 = 0 
   II. 3y^2 + 19y + 30 = 0
10. I. 2x + 5y = 6 
    II. 5x + 11y = 9

Directions (Q. 11 - 15): Two equations (I) and (II) are given in each question. On the basis of these equations you have to decide the relation between x and y and give answer

1. if x > y
2. if x < y
3. if x ≥ y
4. if x ≤ y
5. if x = y or no relation can be established between ‘x’ and ‘y’.

11. I. √1225x + √4900 = 0 
   II. (81)^1/4 y + (343)^1/3 = 0
12. I. \( \frac{18}{x^2} + \frac{6}{x} - \frac{12}{x^2} = \frac{8}{x^2} \) 
   II. y^3 + 9.68 + 5.64 = 16.95
13. I. \( \frac{(2)^5 + (1.1)^3}{6} \) = x^3 
   II. 4y^3 = -(589 ÷ 4) + 5y^3
14. I. $12x^2 + 11x + 12 = 10x^2 + 22x$  
II. $13y^2 - 18y + 3 = 9y^2 - 10y$

15. I. $\left(\frac{x^7}{9}\right) = 169 \div y^3$  
II. $\left(\frac{y^3}{y^2}\right) \times \left(\frac{y^3}{y^2}\right) \times 7 = 273 \div y^2$

Directions (Q. 16 - 20): Two equations (I) and (II) are given in each question. On the basis of these equations you have to decide the relation between $x$ and $y$ and give answer

(1) if $x > y$  
(2) if $x < y$  
(3) if $x \geq y$  
(4) if $x \leq y$  
(5) if $x = y$ or no relation can be established between ‘$x$’ and ‘$y$’.

16. I. $x = \sqrt[4]{2401}$  
II. $2y^2 - 9y - 56 = 0$

17. I. $5x^2 + 3x - 14 = 0$  
II. $2y^2 - 9y + 10 = 0$

18. I. $8x^2 + 31x + 21 = 0$  
II. $5y^2 + 11y - 36 = 0$

19. I. $3x - y = 12$  
II. $y = 1089$

20. I. $15x^2 + 68x + 77 = 0$  
II. $3y^2 + 29y + 68 = 0$

Directions (Q. 21 - 25): Two equations (I) and (II) are given in each question. On the basis of these equations you have to decide the relation between $x$ and $y$ and give answer

(1) if $x > y$  
(2) if $x < y$  
(3) if $x \geq y$

(4) if $x \leq y$  
(5) if $x = y$ or no relation can be established between ‘$x$’ and ‘$y$’.

21. I. $2x^2 + x - 1 = 0$  
II. $6y^2 - 13y + 5 = 0$

22. I. $21x^2 - 122x + 165 = 0$  
II. $3y^2 - 2y - 33 = 0$

23. I. $5x^2 - 29x + 36 = 0$  
II. $10y^2 - 3y - 27 = 0$

24. I. $7x + 4y = 3$  
II. $5x + 3y = 3$

25. I. $7x^2 - 54x + 99 = 0$  
II. $4y^2 - 16y + 15 = 0$

Directions (Q. 26 - 30): Two equations (I) and (II) are given in each question. On the basis of these equations you have to decide the relation between $x$ and $y$ and give answer

(1) if $x > y$  
(2) if $x < y$  
(3) if $x \geq y$

(4) if $x \leq y$  
(5) if $x = y$ or no relation can be established between ‘$x$’ and ‘$y$’.

26. I. $5x^2 - 87x + 378 = 0$  
II. $3y^2 - 49y + 200 = 0$

27. I. $10x^2 - x - 24 = 0$  
II. $y^2 - 2y = 0$
28. I. \( x^2 - 5x + 6 = 0 \)  
   II. \( 2y^2 - 15y + 27 = 0 \)

29. I. \( 3x + 2y = 301 \)  
   II. \( 7x - 5y = 74 \)

30. I. \( 14x^2 - 37x + 24 = 0 \)  
   II. \( 28y^2 - 53y + 24 = 0 \)

Directions (Q. 31-35): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

(1) if \( x > y \)  
(2) if \( x < y \)  
(3) if \( x \geq y \)  
(4) if \( x \leq y \)  
(5) if \( x = y \) or no relation can be established between ‘x’ and ‘y’.

31. I. \( 11x + 5y = 117 \)  
   II. \( 7x + 13y = 153 \)

32. I. \( 6x^2 + 51x + 105 = 0 \)  
   II. \( 2y^2 + 25y + 78 = 0 \)

33. I. \( 6x + 7y = 52 \)  
   II. \( 14x + 4y = 35 \)

34. I. \( x^2 + 11x + 30 = 0 \)  
   II. \( y^2 + 12y + 36 = 0 \)

35. I. \( 2x^2 + x - 1 = 0 \)  
   II. \( 2y^2 - 3y + 1 = 0 \)

Directions (Q. 41-45): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

(1) if \( x > y \)  
(2) if \( x < y \)  
(3) if \( x \geq y \)  
(4) if \( x \leq y \)  
(5) if \( x = y \) or no relation can be established between ‘x’ and ‘y’.

41. I. \( 7x^2 - 9x + 2 = 0 \)  
   II. \( y^2 - 4y + 3 = 0 \)

42. I. \( x^2 = 64 \)  
   II. \( 2y^2 + 25y + 72 = 0 \)

43. I. \( x^2 + x - 20 = 0 \)  
   II. \( 2y^2 - 19y + 45 = 0 \)

44. I. \( 7x + 3y = 26 \)  
   II. \( 2x + 17y = -41 \)

45. I. \( 3x^2 - 20x + 33 = 0 \)  
   II. \( 2y^2 - 11y + 15 = 0 \)

Directions (Q. 46-50): In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer

(1) if \( x > y \)  
(2) if \( x < y \)  
(3) if \( x \geq y \)  
(4) if \( x \leq y \)  
(5) if \( x = y \) or no relation can be established between ‘x’ and ‘y’.

46. I. \( 4x^2 - 43x + 105 = 0 \)  
   II. \( 7y^2 - 29y + 30 = 0 \)

47. I. \( x^2 + 13x + 40 = 0 \)  
   II. \( y^2 + 7y + 10 = 0 \)

48. I. \( x = \sqrt[3]{2197} \)  
   II. \( 2y^2 - 54y + 364 = 0 \)
49. I. $5x^2 - 27x + 36 = 0$  
   II. $y^2 - 2y + 2 = 0$

50. I. $13x - 8y + 81 = 0$  
   II. $15x + 5y + 65 = 0$

Directions (Q. 51-55): Two equations (I) and (II) are given in each question. On the basis of these equations, you have to decide the relation between $x$ and $y$ and give answer

(1) if $x > y$  
(2) if $x < y$  
(3) if $x \geq y$  
(4) if $x \leq y$  
(5) if $x = y$ or no relation can be established between ‘$x$‘ and ‘$y$‘.

51. I. $15x^2 - 19x + 6 = 0$  
   II. $6y^2 - 5y + 1 = 0$

52. I. $x=\sqrt{172}$  
   II. $y^2 - 29y + 210 = 0$

53. I. $3x^2 - 20x + 32 = 0$  
   II. $2y^2 - 19y + 44 = 0$

54. I. $3x + 8y = -2$  
   II. $4x + 18y = l$

55. I. $2x^2 - 15x + 28 = 0$  
   II. $10y^2 - y - 119 = 0$
Solutions

Q1. Option C

I. \(6x^2 - 9x - 10x + 15 = 0\)
   or, \(3(2x - 3) - 5(2x - 3) = 0\)
   \[x = \frac{5}{3}, \frac{3}{2}\]

II. \(6x^2 - 9x + 10x + 15 = 0\)
    or, \(3(2x - 3) - 5(2x - 3) = 0\)
    \[y = \frac{7}{5}, \frac{3}{2}\]

Q2. Option D

I. \(12x^2 + 32x - 21x - 56 = 0\)
   or, \(4(3x + 8) - 7(3x + 8) = 0\)
   \[x = \frac{7}{4}, -\frac{8}{3}\]

II. \(4y^2 - 8y - 7y + 14 = 0\)
    or, \(4(y - 2) - 7(y - 2) = 0\)
    \[y = 2, \frac{7}{4}\]

Q3. Option A

I. \(3x^2 + 9x + 4x + 12 = 0\)
   or, \(3(x + 3) + 4(x + 3) = 0\)
   \[x = -\frac{4}{3}, -3\]

II. \(y^2 + 5y + 4y + 20 = 0\)
    or, \((y + 5) + 4(y + 5) = 0\)
    \[y = \frac{-9}{2}, \frac{-15}{4}\]

Q4. Option B

I. \(8x^2 - 8x - 7x + 7 = 0\)
   or, \(8x(x - 1) - 7(x - 1) = 0\)
   \[x = \frac{7}{8}, 1\]

II. \(2y^2 - 4y - 3y + 6 = 0\)
    or, \(2(y - 2) - 3(y - 2) = 0\)
    \[y = 2, \frac{3}{2}\]

Q5. Option B

Eqn (I) \times 4 + Eqn (II) \times 3
\[28x - 12y = 52\]
\[15x + 12y = 120\]
\[43x = 172\]
\[x = 4 \text{ and } y = 5\]
\[y > x\]

Q6. Option A

I. \(2x^2 - 6x - 5x + 15 = 0\)
   or, \(2(x - 3) - 5(x - 3) = 0\)
   \[x = \frac{3}{2}\]

II. \(21y^2 - 14y - 9y + 6 = 0\)
    or, \(7(y - 3)(3y - 2) = 0\)
    \[y = \frac{3}{7}, \frac{2}{3}\]

Q7. Option C

I. \(5x^2 - 5x - 11x + 11 = 0\)
   or, \(5(x - 1) - 11(x - 1) = 0\)
   \[x = 1, \frac{11}{5}\]
II. \(5y^2 - 5y + 2y - 2 = 0\)

or, \(5y(y - 1) + 2(y - 1) = 0\)

or, \((5y + 2)(y - 1) = 0\)

\(y = 1, -2/5\)

\(x \geq y\)

\(Q8. \) Option D

I. \(x^2 + 4x + 7x + 28 = 0\)

or, \(x(x + 4) + 7(x + 7) = 0\)

or, \((x + 4)(x + 7) = 0\)

\(x = -4, -7\)

II. \(2y^2 + 8y + 5y + 20 = 0\)

or, \(2y(y + 4) + 5(y + 4) = 0\)

or, \((y + 4)(2y + 5) = 0\)

\(y = -4, -5/2\)

\(x \leq y\)

\(Q9. \) Option A

I. \(6x^2 + 15x + 14x + 35 = 0\)

or, \(3x(2x + 5) + 7(2x + 5) = 0\)

or, \((3x + 7)(2x + 5) = 0\)

\(x = -7/3, -5/2\)

II. \(3y^2 + 9y + 10y + 30 = 0\)

or, \(3y(y + 3) + 10(y + 3) = 0\)

or, \((3y + 10)(y + 3) = 0\)

\(y = -3, -10/3\)

\(x > y\)

\(Q10. \) Option B

\(eqn (I) \times 5 - eqn (II) \times 2\)

\(10x + 25y = 30\)

\(10x + 22y = 18\)

\(-\frac{\not{3}y = 12}{3y = 12}\)

\(y = 4\) and \(x = -7\)

\(y > x\)

\(Q11. \) Option A

I. \(\sqrt{1225x} + \sqrt{4900} = 0\)

or, \(35x + 70 = 0\)

or, \(x = -\frac{70}{35} = -2\)

II. \(3y + 7 = 0\)

\(y = -7/3\)

\(x > y\)

\(Q12. \) Option E

I. \(\frac{18+6x-12}{x^2} = 8\)

or, \(x = 1/3 = 0.33\)

II. \(y^2 = 16.95 - 9.68 - 5.64 = 1.63\)

\(y = \pm 1.277\)

\(Q13. \) Option A

\(x^3 = \frac{32 + 1331}{6} = \frac{1363}{6}\)

\(5y^3 - 4y^3 = \frac{589}{4}\)

or, \(y^3 = \frac{589}{4}\)

\(x > y\)

\(Q14. \) Option B

I. \(2x^2 - 11x + 12 = 0\)

or, \(x = 4, 3/2\)

II. \(4y^2 - 8y + 3 = 0\)

or, \(y = 3/2, 1/2\)

\(x \geq y\)

\(Q15. \) Option D
Q16. Option E
I. $(x^5 - 9) = 169 \div y^3$
\[\text{or}, x^5 \times x^3 = 169 \times 9\]
\[\text{or}, x^{7+3} = 1521\]
\[\text{or}, x^2 = 1521\]
\[x = \pm 39\]

II. $\frac{1}{x^4} \times y^4 \times y^2 = \frac{273}{7}$
\[\text{or}, y^{\frac{1}{x^4} + \frac{1}{y^2}} = 39\]
\[\text{or}, y = 39\]
\[x \leq y\]

Q17. Option B
I. $5x^2 + 10x - 7x - 14 = 0$
\[\text{or}, 5x(x + 2) - 7(x + 2) = 0\]
\[\text{or}, (x + 2)(5x - 7) = 0\]
\[x = -2, 7/5\]

II. $2y^2 - 16y + 7y - 56 = 0$
\[2y(y - 8) + 7(y - 8) = 0\]
\[(2y + 7)(y - 8) = 0\]
\[y = 2, 5/2\]
\[x < y\]

Q19. Option B
I. $y = \sqrt{1089}$
\[\text{or}, y = 33\]
II. $x = \frac{12+y}{3} = \frac{12+33}{3} = \frac{45}{3} = 15$
\[x > y\]

Q20. Option A
I. $15x^2 + 68x + 77 = 0$
\[\text{or}, 15x^2 + 35x + 33x + 77 = 0\]
\[\text{or}, 5x(3x + 7) + 11(3x + 7) = 0\]
\[\text{or}, (5x + 11)(3x + 7) = 0\]
\[x = -7/3, -11/5\]

II. $3y^2 + 29y + 68 = 0$
\[\text{or}, 3y^2 + 12y + 17y + 68 = 0\]
\[\text{or}, 3y(y + 4) + 17(y + 4) = 0\]
\[\text{or}, (y + 4)(3y + 17) = 0\]
\[y = -4, -17/3\]
\[x > y\]

Q21. Option D
I. $2x^2 + 2x - x - 1 = 0$
\[\text{or}, 2x(x + 1) - 1(x + 1) = 0\]
\[\text{or}, (x + 1)(2x - 1) = 0\]
\[x = -1, 1/2\]

II. $6y^2 - 3y - 10y + 5 = 0$
\[\text{or}, 3y(2y - 1) - 5(2y - 1) = 0\]
\[\text{or}, (3y - 5)(2y - 1) = 0\]
\[y = -3, 11/3\]
\[x \leq y\]

Q22. Option E
I. $21x^2 - 45x - 77x + 165 = 0$
\[\text{or}, 3x(7x - 15) - 11(7x - 15) = 0\]
or, \((3x - 11)(7x - 15) = 0\)
x = \(11/3, 15/7\)

II. \(3y^2 + 9y - 11y - 33 = 0\)
or, \(3y(y + 3) - 11(y + 3) = 0\)
or, \((3y - 11)(y + 3) = 0\)
y = -3, 11/3

Q23. Option C

I. \(5x^2 - 20x - 9x + 36 = 0\)
or, \(5x(x - 4) - 9(x - 4) = 0\)
or, \((x - 4)(5x - 9) = 0\)
x = 4, 9/5

II. \(10y^2 + 15y - 18y - 27 = 0\)
or, \(5y(2y + 3) - 9(2y + 3) = 0\)
or, \((2y + 3)(5y - 9) = 0\)
y = 9/5, -3/2

Q24. Option B
eqn (I) \times 3 - eqn (II) \times 4

\[
\begin{align*}
21x + 12y & = 9 \\
20x + 12y & = 12 \\
\hline
x & = -3 \\
\end{align*}
\]

and y = 6
x \(< y\)

Q25. Option A

I. \(7x^2 - 21x - 33x + 99 = 0\)
or, \(7x(x - 3) - 33(x - 3) = 0\)
or, \((x - 3)(7x - 33) = 0\)
x = 3, 33/7

II. \(4y^2 - 6y - 10y + 15 = 0\)
or, \(2y(2y - 3) - 5(2y - 3) = 0\)
or, \((2y - 3)(2y - 5) = 0\)
y = 3/2, 5/2

Q26. Option A

I. \(5x^2 - 45x - 42x + 378 = 0\)
or, \(5x(x - 9) - 42(x - 9) = 0\)
or, \((5x - 42)(x - 9) = 0\)
x = 9, 42/5

II. \(3y^2 - 24y - 25y + 200 = 0\)
or, \(3y(y - 8) - 25(y - 8) = 0\)
or, \((y - 8)(3y - 25) = 0\)
y = 8, 25/3

Q27. Option E

I. \(10x^2 - 16x + 15x - 24 = 0\)
or, \(2x(5x - 8) + 3(5x - 8) = 0\)
or, \((2x + 3)(5x - 8) = 0\)
x = -3/8, 8/5

II. \(y^2 - 2y = 0\)
or, \(y(y - 2) = 0\)
y = 0, 2

Q28. Option D

I. \(x^2 - 2x - 3x + 6 = 0\)
or, \(x(x - 2) - 3(x - 2) = 0\)
or, \((x - 2)(x - 3) = 0\)
x = 2, 3

II. \(2y^2 - 6y - 9y + 27 = 0\)
or, \(2y(y - 3) - 9(y - 3) = 0\)
or, \((y - 3)(2y - 9) = 0\)
y = 3, 9/2

Q29. Option B
eqn (I) \times 5 + eqn (II) \times 2

\[
\begin{align*}
15x + 10y & = 1505 \\
14x - 10y & = 148 \\
29x & = 1653 \\
\end{align*}
\]
x = 1653/29 = 57
and \( y = 65 \)
\( x < y \)

Q30. Option C

I. \( 14x^2 - 37x + 24 = 0 \)
or, \( 14x^2 - 21x - 16x + 24 = 0 \)
or, \( 7x(2x - 3) - 8(2x - 3) = 0 \)
or, \( (2x - 3)(7x - 8) = 0 \)
\( x = \frac{3}{2}, \frac{8}{7} \)

II. \( 28y^2 - 53y + 24 = 0 \)
or, \( 28y^2 - 21y - 32y + 24 = 0 \)
or, \( 7y(4y - 3) - 8(4y - 3) = 0 \)
or, \( (7y - 8)(4y - 3) = 0 \)
\( y = \frac{8}{7}, \frac{3}{4} \)

Q31. Option C

eqn (I) \times 7

eqn (II) \times 11
\[
\begin{align*}
77x + 35y &= 819 \\
-77x + 143y &= 1683 \\
-108y &= -864 \\
y &= 8, x = 7 \text{ ie } x < y
\end{align*}
\]

Q32. Option A

I. \( 6x^2 + 21x + 30x + 105 = 0 \)
or, \( 3x(2x + 7) + 15(2x + 7) = 0 \)
or, \( (3x + 15)(2x + 7) = 0 \)
\( x = -5, -\frac{7}{2} \)

II. \( 2y^2 + 12y + 13y + 78 = 0 \)
or, \( 2y(y + 6) + 13(y + 6) = 0 \)
or, \( (2y + 13)(y + 6) = 0 \)
\( y = -\frac{13}{2}, -6 \)
\( x < y \)

Q33. Option C

eqn (I) \times 4

eqn (II) \times 7
\[
24x + 28y = 208 \\
-98x + 28y = 245 \\
-74x = -37 \\
x = 1/2, y = 7 \text{ ie } x < y
\]

Q34. Option B

I. \( x^2 + 5x + 6x + 30 = 0 \)
or, \( x(x + 5) + 6(x + 5) = 0 \)
or, \( (x + 5)(x + 6) = 0 \)
\( x = -5, -6 \)

II. \( y^2 + 12y + 36 = 0 \)
or, \( (y + 6)^2 = 0 \)
or, \( y + 6 = 0 \)
\( y = -6 \)
\( x < y \)

Q35. Option D

I. \( 2x^2 + 2x - x - 1 = 0 \)
or, \( 2x(x + 1) - 1(x + 1) = 0 \)
or, \( (2x - 1)(x + 1) = 0 \)
\( x = \frac{1}{2}, -1 \)

II. \( 2y^2 - 2y - y + 1 = 0 \)
or, \( 2y(y - 1) - 1(y - 1) = 0 \)
or, \( (2y - 1)(y - 1) = 0 \)
\( y = 1/2, 1 \)

Q41. Option D

I. \( 7x^2 - 7x - 2x + 2 = 0 \)
or, \( 7x(x - 1) - 2(x - 1) = 0 \)
\( (7x - 2)(x - 1) = 0 \)
\( x = 2/7, 1 \)

II. \( y^2 - y - 3y + 3 = 0 \)
or, \( y(y - 1) - 3(y - 1) = 0 \)
or, \( (y - 3)(y - 1) = 0 \)
\( y = 1, 3 \)
\( x \leq y \)
Q42. Option E
I. \(x^2 = 64\)
\(x = \pm 8\)
II. \(2y^2 + 9y + 16y + 72 = 0\)
\(or, y(2y + 9) + 8(2y + 9) = 0\)
\(or, (y + 8)(2y + 9) = 0\)
\(y = -8, -9/2\)

Q43. Option C
I. \(x^2 + x - 20 = 0\)
\(or, x(x + 5) - 4(x + 5) = 0\)
\(or, (x - 4)(x + 5) = 0\)
\(x = 4, -5\)
II. \(2y^2 - 10y - 9y + 45 = 0\)
\(or, 2y(y - 5) - 9(y - 5) = 0\)
\(or, (y - 5)(2y - 9) = 0\)
\(y = 5, 9/2\)

Q44. Option A
Eqn (I) \(\times 2\)
Eqn (II) \(\times 7\)
\(14x + 6y = 52\)
\(14x + 119y = -287\)
\[-113y = 339\]
y = -3 and \(x = 5\), ie \(x > y\)

Q45. Option B
I. \(3x^2 - 9x - 11x + 33 = 0\)
\(or, 3x(x - 3) - 11(x - 3) = 0\)
\(or, (3x - 11)(x - 3) = 0\)
\(x = 3, 11/3\)
II. \(2y^2 - 6y - 5y + 15 = 0\)
\(or, 2y(y - 3) - 5(y - 3) = 0\)
\(or, (y - 3)(2y - 5) = 0\)
y = 3, 5/2
\(x \geq y\)

Q46. Option A
I. \(4x^2 - 28x - 15x + 105 = 0\)
\(or, 4x(x - 7) - 15(x - 7) = 0\)
\(or, (x - 7)(4x - 15) = 0\)
x = 7, 15/4
II. \(7y^2 - 14y - 15y + 30 = 0\)
\(or, 7y(y - 2) - 15(y - 2) = 0\)
\(or, (y - 2)(7y - 15) = 0\)
y = 2, 15/7
\(x > y\)

Q47. Option D
I. \(x^2 + 8x + 5x + 40 = 0\)
\(or, x(x + 8) + 5(x + 8) = 0\)
\(or, (x + 5)(x + 8) = 0\)
x = -5, -8
II. \(y^2 + 2y + 5y + 10 = 0\)
\(or, y(y + 2) + 5(y + 2) = 0\)
\(or, (y + 2)(y + 5) = 0\)
y = -2, -5
\(x \leq y\)

Q48. Option D
I. \(x = \sqrt[3]{2197}\)
x = 13
II. \(2y^2 - 28y - 26y + 364 = 0\)
\(or, 2y(y - 14) - 26(y - 14) = 0\)
\(or, (2y - 26)(y - 14) = 0\)
y = 14, 13
\(x \leq y\)

Q49. Option A
I. \(5x^2 - 15x - 12x + 36 = 0\)
\(or, 5x(x - 3) - 12(x - 3) = 0\)
\(or, (5x - 12)(x - 3) = 0\)
x = 12/5, 3
II. \(y^2 - y - 2y + 2 = 0\)
\[\text{or, } y(y - 1) - 2(y - 1) = 0\]
\[\text{or, } (y - 1)(y - 2) = 0\]
\[y = 1, 2\]
\[x > y\]

Q50. Option C

eqn (I) \times 5 + eqn (II) \times 8

\[65x - 40y + 405 = 0\]
\[120x + 40y + 520 = 0\]
\[185x + 0 + 925 = 0\]
\[x = \frac{-925}{185} = -5\]
\[y = \frac{13x + 81}{8} = \frac{16}{8} = 2\]
\[x < y\]

Q51. Option A

I. \(15x^2 - 10x - 9x + 6 = 0\)
\[\text{or, } 5x(3x - 2) - 3(3x - 2) = 0\]
\[\text{or, } (5x - 3)(3x - 2) = 0\]
\[x = \frac{3}{5}, \frac{2}{3}\]

II. \(6y^2 - 3y - 2y + 1 = 0\)
\[\text{or, } 3y(2y - 1) - 1(2y - 1) = 0\]
\[\text{or, } (3y - 1)(2y - 1) = 0\]
\[y = \frac{1}{3}, \frac{1}{2}\]
\[x > y\]

Q52. Option B

I. \(x = \sqrt{172}\)
\[x = 13.11\]

II. \(y^2 - 14y - 15y + 210 = 0\)
\[\text{or, } y(y - 14) - 15(y - 14) = 0\]
\[\text{or, } (y - 14)(y - 15) = 0\]
\[y = 14, 15\]
\[x < y\]
New Pattern Sets

Quantity I: The age of teacher, if the average age of 36 students is 14. When teacher’s age is included the average increases by 1.
Quantity II: The age of teacher, if the average age of 19 students is 35. When teacher’s age is included the average increases by 0.5.
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option A
Solution:
I (14+37*1) = 14+37 = 51 yrs.
II (35+20*0.5) = 35 + 10 = 45 yrs.

Quantity I: Profit Percentage, if Some articles were bought at 6 articles for Rs. 5 and sold at 5 articles for Rs. 6.
Quantity II: Profit Percentage, if 100 toys are bought at the rate of Rs. 350 and sold at the rate of Rs. 48 per dozen.
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option A
Solution:
I CP of 30 articles = Rs. 25
SP of 30 articles = Rs. 36
Profit 36 - 25 = 11

Profit %ge = (11/25) * 100 = 44%
II CP of 1 toy = Rs. 350
SP of 1 toy = Rs. 48
Profit = 48 - 350 = 3.5
Profit %ge = (3.5/350) * 100 = 14.28%

Quantity I: On selling 17 balls at Rs. 720, there is a loss equal to the cost price of 5 balls. The cost price of a ball is:
Quantity II: A man buys a cycle for Rs. 1400 and sells it at a loss of 15%. The selling price is:
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option A
Solution:
I. C.P. of 12 balls = S.P. of 17 balls = Rs. 720.
CP of 1 ball = 720/12 = Rs. 60.
II. SP = 85% of 1400 = Rs. 1190.

Quantity I: A and B together can do a piece of work in 4 days. If A alone can do the same work in 6 days, then B alone can do the same work in?
Quantity II: A can do a piece of work in 4 hours; B and C together can do it in 3 hours, while A and C together can do it in 2 hours. How long will B alone take to do it?
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option A
Solution:
I. If the no of article bought is LCM of 6 and 5 is 30
CP of 30 articles = Rs. 25
SP of 30 articles = Rs. 36
Profit 36 - 25 = 11

Option A
Solution:
I. B work = $\frac{1}{4} - \frac{1}{6} = \frac{2}{24} = \frac{1}{12}$ days
II. A’s 1 hr work $\frac{1}{4}$.

(B+C’s) 1 hr work 1/3.
(A+C’s) 1 hr work 1/2.
A+B+C 1 hr work = $\frac{1}{4} + \frac{1}{3} = \frac{7}{12}$.
B’s work = $\frac{7}{12} - \frac{1}{2} = \frac{1}{12}$ 12 hours.

Quantity I: A man on tour travels first 160 km at 64 km/hr and the next 160 km at 80 km/hr. The average speed of the tour is:
Quantity II: A went from P to Q with the speed of 60 km/hr. and return back with the speed of 90 km/hr. Find the average speed.
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option C
Solution:
I. Total time taken = $(160/64 + 160/80)$
=9/2hrs
Then avg speed = $320/(9/2)$
= $320 * 2/9 = 71.11$ km/hr.
II. (2*60*90)/150=72 km/hr.

Quantity I: The ratio between the speeds of two trains is 7 : 8. If the second train runs 400 km in 4 hours, then the speed of the first train is:
Quantity II: Find the speed of a train which passes a tree in 12 seconds. The length of the train is 264 m.
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option A
Solution:
I. Let the speed of two trains be 7x and 8x.

400/4=100
8x=100=>x=12.5.
Then speed of first train =7*12.5
=87.5 km/hr.
II. Length of the train = 264 m.
Time taken to pass the tree = 12 seconds.
Speed of the train = 264/12 m/sec = 22 m/sec = 22 * 18/5 km/hr = 79.2 km/hr.

Quantity I: A and B started a business by investing Rs. 20000 and Rs. 35000 respectively. Find the share of B out of an annual profit of Rs. 3520.
Quantity II: X and Y invested in a business. Their profit ratio is 2:3. If X invested Rs. 4000. Find the amount invested by Y?
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option C
Solution:
I Ratio 20:35=4:7
$I = 3520$
$7 ? => Rs 2240.$
II $4000/y = 2/3$
y = 6000.

Quantity I: The age of P is twelve times that of her daughter Q. If the age of Q is 3 years, what is the age of P?
Quantity II: The ratio between the present ages of A and B is 2:3. 4 years ago the ratio between their ages was 5:8. What will be A’s age after 7 years?
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established
Option A
Solution:
I
Ratio P:Q 12:1
1...== 3
12 ? == 12*3 =36years.
II
(5x+4)/(8x+4) =2/3
15x+12 = 16x+8
x=4.
A’s age 4 yrs ago 5*4=20
Then A’s age after 7yrs is 20+4+7=31yrs.

□ Quantity I: The difference between SI and CI compounded annually on a certain sum of money for 2 years at 8% per annum is Rs. 12.80. Find the principal.
Quantity II: A sum fetched a total simple interest of Rs. 800 at the rate of 8 % per annum in 5 years. What is the sum?
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option E
Solution:
I SI-CI=Pr²/100.
P*8²/100=12.8
64P/(100*100)=12.8
P=Rs2000.
II SI=Pnr/100
800=P*8*5/100
P=800*100/40
=Rs2000.

□ There are 5 Brown balls, 4 Blue balls & 3 black balls in a bag. Four balls are chosen at random.
Quantity I: The probability of their being 2 Brown and 2 Blue ball
Quantity II: The probability of their being 2 Brown, 1 Blue & 1 blacks
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Directions: Each question below contains a statement followed by Quantity I and Quantity II. Find both to find the relationship among them. Mark your answer accordingly.

If the quantity of milk in mixture is 10 litre then find the quantity of water if
Quantity I: After selling it at CP, milkman saves 25%
Quantity II: If the ratio of Milk and water is 5:1
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option A
Explanation:
Quantity I.
Milk : Water
100 : 25
10=4 : 1=2.5
In Quantity 2:
5=10 ; 1=2
Quantity 1 > Quantity 2

Find the original consumption if
Quantity I: After increasing price by 20% a family now gets 5 kg less on that price.
Quantity II: After increasing price by 25%, a family increases its expenditure by 10% and gets 6 kg less than original consumption
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

**Option C**

**Explanation:**
Quantity I: 20% Increase = 1/5
\[ \frac{1}{5} \times \text{New Price} = 5 \]
\[ \text{New Price} = 30 \text{ Kg} \]
Quantity II:
\[ \frac{100}{110} = \frac{125}{125} \]
\[ 125 - 110 = 15 \]
\[ \frac{15}{125} \times \text{New Price} = 6 \]
\[ \text{New Price} = 50 \text{ Kg} \]
\[ \text{II} > \text{I} \]

Find the present age of A
Quantity I: Three years before, the ratio of ages of A and B was 5:6.
Three years hence this ratio will become 6:7
Quantity II: Eleven years before the ratio of ages of A and B was 1:3 and eleven years hence the ratio will become 1:2
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

**Option E**

**Explanation:**
Quantity I: Three years before, the ratio of ages of A and B was 5:6.
Three years hence this ratio will become 6:7
Quantity II: Eleven years before the ratio of ages of A and B was 1:3 and eleven years hence the ratio will become 1:2
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Find the sum
Quantity I: If the Compound Interest for 2 years at 20% rate of interest is Rs 1,320.
Quantity II: If the amount on a sum for 2 years in which rate of interest for 3 years makes a sum of 125 to amount 216 is Rs 2880.
A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

**Option A**

**Explanation:**
\[ \text{CI for 2 years on } 20\% = \frac{1}{5} \]
\[ 5 \quad 6 \quad 5 \quad 6 \]
\[ 5 \times 5 = 25 \quad 6 \times 6 = 36 \]
\[ \text{CI} = 36 - 25 = 11 \quad = 1320 \]
\[ \text{Sum} = 25 = 3000 \]
Quantity II: Find Rate
\[ \text{Cube root(125)}: \text{Cube root (216)} \]
\[ 5:6 \]
Find the distance if

Quantity I: A man covers a distance in 15 hours. He covers first half at 12 kmph and second half at 15 kmph.

Quantity II: Two buses move towards each other at a speed of 30 kmph and 40 kmph respectively. When they meet it is found that faster bus covers 30 km more than slower one.

A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option C

Explanation:

Average Speed = \( \frac{2 \times 12 \times 15}{12 + 15} \)

\[ D = 5 \times T = \frac{2 \times 12 \times 15}{27} \times 15 = 200 \text{ KM} \]

Quantity II: Speed difference for 1 hour = 40-30 = 10 Kmph; means in 1 hour faster bus will cover 10 km more than slower one; hence to cover 30 km more it will take 3 hours.

Distance = Relative Speed * Time

\[ D = 3 \times (30 + 40) = 210 \text{ KM} \]

II > I

Quantity I: Selling price, if cost price is Rs 24,000 and profit is 20%

Quantity II: Selling price, if cost price is Rs 24,000 and shopkeeper gained 16 2/3% after giving discount of 25%

A) Quantity I > Quantity II
B) Quantity I ≥ Quantity II
C) Quantity II > Quantity I
D) Quantity II ≥ Quantity I
E) Quantity I = Quantity II or Relation cannot be established

Option C

Explanation: LCM = 24

So

\[ A + B = 24/8 = 3 \]
\[ B + C = 24/12 = 2 \]
\[ C + A = 24/8 = 3 \]
\[ 2(A+B+C) = 3+2+3 = 8 \]
\[ A+B+C = 4 \]

\[ (A+B+C) - (B+C) = 4 - 2 = 2 \]
So A = 24/2 = 12 days  
A = 36 days

Quantity I: Volume, if diameter of sphere is 14 cm  
Quantity II: Volume, if side of cube is 8 cm

A) Quantity I > Quantity II  
B) Quantity I ≥ Quantity II  
C) Quantity II > Quantity I  
D) Quantity II ≥ Quantity I  
E) Quantity I = Quantity II or  
Relation cannot be established

Option A  
Explanation:  
Quantity I. Volume of sphere = \((4/3)\pi R^3\)  
\(R=7 ; Volume = 1437.33\)  
Quantity II: \(V=a^3 = 8^3 = 512\)  
I > II

Quantity I: \(x \) where: \(3x^2 + 2x - 8=0\)  
Quantity II: \(y \) where: \(3y^2 + 5y -12 =0\)  
A) Quantity I > Quantity II  
B) Quantity I ≥ Quantity II  
C) Quantity II > Quantity I  
D) Quantity II ≥ Quantity I  
E) Quantity I = Quantity II or  
Relation cannot be established

Option E  
Explanation: \(x= -2 \) and \(4/3 \); \(y= -3 \) and \(4/3 \); So no relation

Quantity I: \(x \) where: \(4x^2 - 16x + 15 = 0\)  
Quantity II: \(y \) where: \(2y^2 + y -6 = 0\)  
A) Quantity I > Quantity II  
B) Quantity I ≥ Quantity II  
C) Quantity II > Quantity I  
D) Quantity II ≥ Quantity I  
E) Quantity I = Quantity II or

Relation cannot be established
Quadratic equations

Directions: In the following question two equations numbered I and II are given. You have to solve both the equations and give answer thereof.

Q1.
I. \( p^2 + 5p + 6 = 0 \)
II. \( q^2 + 3q + 2 = 0 \)
(a) \( p \) is greater, than
q. (b) \( p \) is smaller than
q. (c) \( p \) is equal to q.
(d) \( p \) is either equal to or greater than q.
(e) \( p \) is either equal to or smaller than q.
Q2.
I. \( p^2 = 4 \)
II. \( q^2 + 4q = -4 \)
(a) \( p \) is greater, than
q. (b) \( p \) is smaller than
q. (c) \( p \) is equal to q.
(d) \( p \) is either equal to or greater than q.
(e) \( p \) is either equal to or smaller than q.
Q3.
I. \( 4p^2 = 56 \)
II. \( q^2 - 17q + 72 = 0 \)
(a) \( p \) is greater, than
q. (b) \( p \) is smaller than
q. (c) \( p \) is equal to q.
(d) \( p \) is either equal to or greater than q.
(e) \( p \) is either equal to or smaller than q.
Q4.
I. \( 3p + 2q - 58 = 0 \)
II. \( 4q + 4p = 92 \)
(a) \( p \) is greater, than
q. (b) \( p \) is smaller than
q. (c) \( p \) is equal to q.
(d) \( p \) is either equal to or greater than q.
(e) \( p \) is either equal to or smaller than q.
Q5.
I. \( 3p^2 + 17p + 10 = 0 \)
II. \( 10q^2 + 9q + 2 = 0 \)
(a) \( p \) is greater, than
q. (b) \( p \) is smaller than
q. (c) \( p \) is equal to q.
(d) \( p \) is either equal to or greater than q.
(e) \( p \) is either equal to or smaller than q.
Q6.
I. \( 4x^2 - 8x + 3 = 0 \)
II. \( 2y^2 - 7y + 6 = 0 \)
(a) \( x < y \)
(b) \( x \leq y \)
(c) \( x = y \)
(d) \( x \geq y \)
(e) \( x > y \)
Q7.
I. \( x^2 + x - 6 = 0 \)
II. \( 2y^2 - 13y + 21 = 0 \)
(a) \( x < y \)
(b) \( x \leq y \)
(c) \( x = y \)
(d) \( x \geq y \)
(e) \( x > y \)
Q8.
I. \( x^2 - x - 6 = 0 \)
II. \( 2y^2 + 13y + 21 = 0 \)
(a) \( x < y \)
(b) \( x \leq y \)
(c) \( x = y \)
(d) \( x \geq y \)
(e) \( x > y \)
Q9.
I. \( x^2 = 4 \)
II. \( y^2 + 6y + 9 = 0 \)
(a) \( x < y \)
(b) \( x \leq y \)
(c) \( x = y \)
(d) \( x \geq y \)
(e) \( x > y \)
Q10.
I. \( 2x + 3y = 4 \)
II. \( 3x + 2y = 11 \)
(a) \( x < y \)
(b) \( x \leq y \)
(c) \( x = y \)
(d) \( x \geq y \)
(e) \( x > y \)
Q11.
I. \( 4x + 2y = 51 \)
II. \( 15y + 13x = 221 \)
(a) \( x > y \)
(b) \( x \leq y \)
(c) \( x < y \)
(d) \( x \geq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established
Q12.
I. \( 8x^2 + 3x = 38 \)
II. \( 6y^2 + 34 = 29y \)
(a) \( x > y \)
(b) \( x \leq y \)
(c) \( x < y \)
(d) \( x \geq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established
Q13.
I. \(x^2 + 91 = 20x\)
II. \(10y^2 - 29y + 21 = 0\)

(a) \(x > y\)
(b) \(x \leq y\)
(c) \(x < y\)
(d) \(x \geq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q14.

I. \(6x^2 + 13x + 5 = 0\)
II. \(10y^2 - 29y + 21 = 0\)

(a) \(x > y\)
(b) \(x \leq y\)
(c) \(x < y\)
(d) \(x \geq y\)
(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q15.

I. \(x^2 - 14x + 48 = 0\)
II. \(y^2 + 6 = 5y\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q16.

I. \(x^2 - 4x + 4 = 0\)
II. \(y^2 - 6y + 5 = 0\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q17.

I. \(x^2 + 9x + 20 = 0\)
II. \(y^2 + 7y + 12 = 0\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q18.

I. \(x^2 = 529\)
II. \(y^2 = \sqrt{529}\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q19.

I. \(x^2 + 13x = -42\)
II. \(y^2 + 16y + 63 = 0\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)
(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q20.

I. \(2x^2 + 3y\)
II. \(4x^2 + 2y = 16\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)
(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q21.

I. \(x^2 - 1 = 0\)
II. \(y^2 + 4y + 3 = 0\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q22.

I. \(x^2 - 7x + 12 = 0\)
II. \(y^2 - 12y + 32 = 0\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q23.

I. \(x^3 - 371 = 629\)
II. \(y^3 - 543 = 788\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q24.

I. \(5x + 2y = 31\)
II. \(3x + 7y = 36\)

(a) \(x > y\)
(b) \(x \geq y\)
(c) \(x < y\)
(d) \(x \leq y\)

(e) \(x = y\) or relationship between \(x\) and \(y\) cannot be established

Q25.
Q26.
I. $2x^2 + 11x + 12 = 0$
II. $5y^2 + 27y + 10 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q27.
I. $2x^2 + 11x + 14 = 0$
II. $4y^2 + 12y + 9 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q28.
I. $x^2 - 4 = 0$
II. $y^2 + 6y + 9 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q29.
I. $x^2 = 729$
II. $y = \sqrt{729}$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q30.
I. $x^4 - 227 = 398$
II. $y^2 + 321 = 346$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q31.
I. $x^2 = 729$
II. $y = \sqrt{729}$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q32.
I. $x^2 - 8x + 15 = 0$
II. $y^2 - 3y + 2 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q33.
I. $x^2 - 32 = 112$
II. $y - \sqrt{169} = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q34.
I. $x - \sqrt{121} = 0$
II. $y^2 - 121 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q35.
I. $x^2 - 16 = 0$
II. $y^2 - 9y + 20 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q36.
I. $3x + 8x + 4 = 0$
II. $4y^2 - 19y + 12 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established
Q37. II. $y^2 - y - 30 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q38. II. $y^2 - y - 30 = 0$
(a) $x > y$
(b) $x \leq y$
(c) $x < y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q39. II. $y^2 - y - 30 = 0$
(a) $x > y$
(b) $x \leq y$
(c) $x < y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q40. Directions (43-47): In the following questions two equations numbered I and II are given. You have to solve both the equations and — Give answer

Q41. II. $y^2 - 13y + 2 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q42. II. $\sqrt{y + 155} - 39 = \sqrt{49}$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q49.
I. $1.44x^2 - 25 = 59 - 7x$
II. $\sqrt{(y + 222)} - \sqrt{36} = \sqrt{81}$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q50.
I. $1.144x^2 - 16 = 9$
II. $1.12y^2 + 74 = \sqrt{49}$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q51.
I. $x^2 - 9x + 20 = 0$
II. $y^2 - 13y + 42 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q52.
I. $2x + 3y = 78$ and $3x + 2y = 72$; what is value of $x + y$ ?
(a) 36
(b) 32
(c) 30
(d) Cannot be determined
(e) None of these

Q53.
I. $20x^2 - x - 12 = 0$
II. $20y^2 + 27y + 9 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q54.
I. $x^2 - 218 = 106$
II. $y^2 - 37y + 342 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$

Q55.
I. $\sqrt{361x} + \sqrt{16} = 0$
II. $\sqrt{441} y + 4 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q56.
I. $\sqrt{(x + 18)} = \sqrt{144} - \sqrt{49}$
II. $y^2 + 409 = 473$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q57.
I. $x^2 - 7x + 12 = 0$
II. $y^2 - 9y + 20 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q58.
I. $y^2 - x^2 = 32$
II. $y - x = 2$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q59.
I. $3x + 5y = 28$
II. $8x - 3y = 42$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q60.
I. $\sqrt{289} x + \sqrt{25} = 0$
II. $\sqrt{676} y + 10 = 0$
(a) $x > y$
(b) $x \geq y$
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established

**Q61.**

I. \( 8x^2 - 78x + 169 = 0 \)
II. \( 20y^2 - 117y + 169 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established

**Q62.**

I. \( 8x^2 - 78x + 169 = 0 \)
II. \( 20y^2 - 117y + 169 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established

**Q63.**

I. \( 8x^2 - 78x + 169 = 0 \)
II. \( 20y^2 - 117y + 169 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established

**Q64.**

I. \( 8x^2 - 78x + 169 = 0 \)
II. \( 20y^2 - 117y + 169 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established

**Q65.**

I. \( 8x^2 - 78x + 169 = 0 \)
II. \( 20y^2 - 117y + 169 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established

**Q66.**

I. \( 8x^2 - 78x + 169 = 0 \)
II. \( 20y^2 - 117y + 169 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established

**Q67.**

I. \( 8x^2 - 78x + 169 = 0 \)
II. \( 20y^2 - 117y + 169 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established

**Q68.**

I. \( 8x^2 - 78x + 169 = 0 \)
II. \( 20y^2 - 117y + 169 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established
\(\begin{align*}
(a) & \ x > y \\
(b) & \ x \geq y \\
(c) & \ x < y \\
(d) & \ x \leq y \\
(e) & \text{x = y or relationship between } x \text{ and } y \text{ cannot be established}
\end{align*}\)

\(Q73.\)

\(\begin{align*}
(x^{3/4} + 16)^2 &= 144 \div x^{3/2} \\
(y^{2/3} \times y^{2/3} \times 3104) &= 16 \times y^2
\end{align*}\)

\(Q74.\)

\(\begin{align*}
(\sqrt[4]{25}x + \sqrt{4900}) &= 0 \\
II. & \sqrt{1089}y + 2081 = 2345
\end{align*}\)

\(Q75.\)

\(\begin{align*}
I. & \sqrt[3]{784}x + 1234 = 1486 \\
II. & \sqrt{121}y + (6)^3 = 260
\end{align*}\)

\(Q76.\)

\(\begin{align*}
I. & 12x^2 + 11x + 12 = 10x^2 + 22x \\
II. & 139^2 - 18y + 3 = 9y^2 - 10y
\end{align*}\)

\(Q77.\)

\(\begin{align*}
I. & \sqrt{(25x^2)} - 125 = 0 \\
II. & \sqrt{361}y + 95 = 0
\end{align*}\)

\(Q78.\)

\(\begin{align*}
I. & x^2 - 19x + 84 = 0 \\
II. & y^2 - 25y + 156 = 0
\end{align*}\)
Q84.

I. $3x^2 - 13x + 14 = 0$
II. $y^2 - 7y + 12 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q85.

I. $x^2 + 5x + 6 = 0$
II. $y^2 + 7y + 12 = 0$
(a) $x \geq y$
(b) $x > y$
(c) $x \leq y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q86.

I. $x^2 + 20 = 9x$
II. $y^2 + 42 = 13y$
(a) $x \geq y$
(b) $x > y$
(c) $x \leq y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q87.

I. $2x + 3y = 14$
II. $4x + 2y = 16$
(a) $x \geq y$
(b) $x > y$
(c) $x \leq y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q88.

I. $x = \sqrt{625}$
II. $y = \sqrt{676}$
(a) $x \geq y$
(b) $x > y$
(c) $x \leq y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q89.

I. $x^2 + 4x + 4 = 0$
II. $y^2 - 8y + 16 = 0$
(a) $x \geq y$
(b) $x > y$
(c) $x \leq y$
(d) $x < y$
(e) $x = y$ or no relation between two can be established.

Q90.

I. $x^2 - 24x + 144 = 0$
II. $y^2 - 26y + 169 = 0$
(a) $x < y$
(b) $x > y$
(c) $x = y$
(d) $x \geq y$
(e) $x \leq y$

Q91.

I. $2x^2 + 3x - 20 = 0$
II. $2y^2 + 19y + 44 = 0$
(a) $x \geq y$
(b) $x > y$
(c) $x \leq y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q92.

I. $x^2 + 3x + 6 = 0$
II. $y^2 + 7x + 12 = 0$
(a) $x < y$
(b) $x > y$
(c) $x = y$
(d) $x \geq y$
(e) $x \leq y$

Q93.

I. $x^2 - 6x = 7$
II. $2y^2 + 13y + 15 = 0$
(a) $x < y$
(b) $x > y$
(c) $x = y$
(d) $x \geq y$
(e) $x \leq y$

Q94.

I. $10x^2 - 7x + 1 = 0$
II. $35y^2 - 12y + 1 = 0$
(a) $x < y$
(b) $x > y$
(c) $x = y$
(d) $x \geq y$
(e) $x \leq y$

Q95.

I. $4x^2 - 32x + 63 = 0$
II. $2y^2 - 11y + 15 = 0$
(a) $x < y$
(b) $x > y$
(c) $x = y$
(d) $x \geq y$
(e) $x \leq y$

Q96.

I. $x^3 = (216^{\frac{1}{3}})^3$
II. $6y^2 = 150$
(a) x < y  
(b) x > y  
(c) x ≤ y  
(d) x ≥ y  
(e) x = y or no relation between two can be established.

Q97.  
I. 12x² + 17x + 6 = 0  
II. 6y² + 5y + 1 = 0  
(a) x < y  
(b) x > y  
(c) x ≤ y  
(d) x ≥ y  
(e) x = y or the relation cannot be established.

Q98.  
I. 20x² + 9x + 1 = 0  
II. 30y³ + 11y + 1 = 0  
(a) x < y  
(b) x > y  
(c) x ≤ y  
(d) x ≥ y  
(e) x = y or no relation between two can be established.

Q99.  
I. x² + 17x + 72 = 0  
II. y² + 19y + 90 = 0  
(a) x < y  
(b) x > y  
(c) x ≤ y  
(d) x ≥ y  
(e) x = y or no relation between two can be established.

Q100.  
I. 6x² + 23x + 20 = 0  
II. 6y² + 31y + 35 = 0  
(a) x > y  
(b) x ≥ y  
(c) x < y  
(d) x ≤ y  
(e) x = y or the relation cannot be established.

Q101.  
I. x² = 81  
II. y² - 18y + 81 = 0  
(a) x > y  
(b) x ≥ y  
(c) x < y  
(d) x ≤ y  
(e) x = y or the relation cannot be established.

Q102.  
I. 4x² + 20x + 21 = 0  
II. 2y² + 17y + 35 = 0  
(a) x > y  
(b) x ≥ y  
(c) x < y  
(d) x ≤ y
(e) \( x = y \) or relationship cannot be established between them

Q109.

I. \( 4x^2 + 11x + 6 = 0 \)
II. \( 2y^2 + 11y + 15 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship cannot be established

Q110.

I. \( 2x^2 + 11x - 14 = 0 \)
II. \( 2y^2 + 11y + 15 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship cannot be established

Q111.

I. \( 4x^2 + 11x + 6 = 0 \)
II. \( 2y^2 + 11y + 15 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship cannot be established

Q112.

I. \( 4x^2 + 11x + 6 = 0 \)
II. \( 2y^2 + 11y + 15 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship cannot be established

Q113.

I. \( 4x^2 - 23x + 1 = 0 \)
II. \( 2y^2 + 11y + 15 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship cannot be established

Q114.

I. \( 4x^2 + 11x + 6 = 0 \)
II. \( 2y^2 + 11y + 15 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or relationship cannot be established

Q115.

I. \( 2x^2 - 19x + 45 = 0 \)
II. \( 6y^2 - 48y + 90 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or the relation cannot be established.

Q116.

Directions: In the following question two equations numbered I and II are given. You have to solve both the equations and give answer thereof.

I. \( 2x^2 + 18x + 90 = 0 \)
II. \( 6y^2 + 18y + 14 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or the relation cannot be established.

Q117.

I. \( 6x^2 - 29x + 35 = 0 \)
II. \( 3y^2 - 11y + 10 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or the relation cannot be established.

Q118.

I. \( 2x^2 - 19x + 45 = 0 \)
II. \( 6y^2 - 48y + 90 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or the relation cannot be established.

Q119.

I. \( 2x^2 - 19x + 45 = 0 \)
II. \( 6y^2 - 48y + 90 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or the relation cannot be established.

Q120.

I. \( 2x^2 + 18x + 90 = 0 \)
II. \( 6y^2 + 18y + 14 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or the relation cannot be established.

Q121.

I. \( 2x^2 - 19x + 45 = 0 \)
II. \( 6y^2 - 48y + 90 = 0 \)
(a) \( x > y \)
(b) \( x \geq y \)
(c) \( x < y \)
(d) \( x \leq y \)
(e) \( x = y \) or the relation cannot be established.
(d) \( x \leq y \)
(e) \( x = y \) or the relation cannot be established.

Q122.  
(I. \( 6x^2 + 19x + 15 = 0 \))  
(II. \( 2y^2 + 11y + 1 = 0 \))  
(a) \( x > y \)  
(b) \( x \geq y \)  
(c) \( x < y \)  
(d) \( x \leq y \)  
(e) \( x = y \) relationship between \( x \) and \( y \) cannot be established.

Q123.  
(I. \( 9x^2 - 27x + 20 = 0 \))  
(II. \( 6y^2 - 5y + 1 = 0 \))  
(a) \( x > y \)  
(b) \( x \geq y \)  
(c) \( x < y \)  
(d) \( x \leq y \)  
(e) \( x = y \) relationship between \( x \) and \( y \) cannot be established.

Q124.  
(I. \( x^2 - 6x + 9 = 0 \))  
(II. \( y^2 - 11y + 24 = 0 \))  
(a) \( x > y \)  
(b) \( x \geq y \)  
(c) \( x < y \)  
(d) \( x \leq y \)  
(e) \( x = y \) relationship between \( x \) and \( y \) cannot be established.

Q125.  
(I. \( 2x^2 - x - 10 = 0 \))  
(II. \( 2y^2 - y - 21 = 0 \))  
(a) \( x > y \)  
(b) \( x \geq y \)  
(c) \( x < y \)  
(d) \( x \leq y \)  
(e) \( x = y \) relationship between \( x \) and \( y \) cannot be established.

Q126.  
(I. \( 2x^2 + 11x + 15 = 0 \))  
(II. \( 4y^2 + 22y + 24 = 0 \))  
(a) \( x \geq y \)  
(b) \( x < y \)  
(c) \( x > y \)  
(d) \( x \leq y \)  
(e) \( x = y \) relationship between \( x \) and \( y \) cannot be established.

Q127.  
(I. \( 2x^2 + 9x + 9 = 0 \))  
(II. \( 2y^2 + 17y + 36 = 0 \))  
(a) \( x \geq y \)  
(b) \( x < y \)  
(c) \( x > y \)  
(d) \( x \leq y \)  
(e) \( x = y \) relationship between \( x \) and \( y \) cannot be established.

Q128.  
(I. \( 3x^2 - 22x + 40 = 0 \))  
(II. \( 2y^2 - 19y + 44 = 0 \))  
(a) \( x \geq y \)  
(b) \( x < y \)  
(c) \( x > y \)  
(d) \( x \leq y \)  
(e) \( x = y \) relationship between \( x \) and \( y \) cannot be established.
Q135.
I. $2x^2 + 19x + 45 = 0$
II. $2y^2 + 11y + 12 = 0$
(a) $x > y$
(b) $x > y$
(c) $x < y$
(d) relationship between $x$ and $y$ cannot be determined
(e) $x \leq y$

Q136.
I. $3x^2 - 13x + 12 = 0$
II. $2y^2 - 15y + 28 = 0$
(a) $x > y$
(b) $x > y$
(c) $x < y$
(d) relationship between $x$ and $y$ cannot be determined
(e) $x \leq y$

Q137.
I. $x^2 = 16$
II. $2y^2 - 17y + 36 = 0$
(a) $x > y$
(b) $x > y$
(c) $x < y$
(d) relationship between $x$ and $y$ cannot be determined
(e) $x \leq y$

Q138.
I. $3x^2 - 13x + 9 = 0$
II. $3y^2 - 14y + 16 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established.

Q139.
I. $3x^2 - 13x + 9 = 0$
II. $2y^2 + 19y + 21 = 0$
(a) $x > y$
(b) $x > y$
(c) $x < y$
(d) relationship between $x$ and $y$ cannot be determined
(e) $x \leq y$

Q140.
I. $x^2 + x - 12 = 0$
II. $y^2 + 2y - 8 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established.

Q141.
I. $4x^2 - 13x + 9 = 0$
II. $3y^2 - 14y + 16 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established.

Q142.
I. $3x^2 + 16x + 9 = 0$
II. $4y^2 + 19y + 21 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established.

Q143.
I. $3x^2 + 16x + 21 = 0$
II. $6y^2 + 17y + 12 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established.

Q144.
I. $x^2 = 49$
II. $y^2 - 4y - 21 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established.

Q145.
I. $x^2 = 81$
II. $y^2 + 13y + 36 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x > y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q146.
I. $2x^2 - 11x + 14 = 0$
II. $2y^2 - 7y + 6 = 0$
(a) $x = y$
(b) $x \leq y$
(c) $x > y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q147.
1. $3x^2 - 13x + 14 = 0$
II. $3y^2 - 17y + 22 = 0$
(a) $x \geq y$
(b) $x \leq y$
(c) $x > y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q148.

I. $2x^2 + 9x + 9 = 0$
II. $4y^2 + 9y + 5 = 0$
(a) $x \geq y$
(b) $x \leq y$
(c) $x > y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q149.

I. $x^2 - 7x + 12 = 0$
II. $2y^2 - 19y + 44 = 0$
(a) $x \geq y$
(b) $x \leq y$
(c) $x > y$
(d) $x < y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q150.

I. $x^2 = 144$
II. $y^2 - 24y + 144 = 0$
(a) $x \leq y$
(b) $x \geq y$
(c) relationship between $x$ and $y$ cannot be determined
(d) $x < y$
(e) $x > y$

Q151.

I. $2x^2 - 9x + 10 = 0$
II. $2y^2 - 13y + 20 = 0$
(a) $x \leq y$
(b) $x \geq y$
(c) relationship between $x$ and $y$ cannot be determined
(d) $x < y$
(e) $x > y$

Q152.

I. $3x^2 - 22x + 40 = 0$
II. $5y^2 - 21y + 16 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship between $x$ and $y$ cannot be established.

Q153.

I. $5x^2 + 8x + 3 = 0$
II. $3y^2 + 7y + 4 = 0$
(a) $x \leq y$
(b) $x \geq y$
(c) relationship between $x$ and $y$ cannot be determined
(d) $x < y$
(e) $x > y$

Q154.

I. $3x^2 - 22x + 10 = 0$
II. $3y^2 + 10y - 8 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship between $x$ and $y$ cannot be established.

Q155.

I. $3x^2 - 13x + 12 = 0$
II. $3y^2 - 13y + 14 = 0$
(a) $x \leq y$
(b) $x \geq y$
(c) relationship between $x$ and $y$ cannot be determined
(d) $x < y$
(e) $x > y$
(e) $x = y$ or the relationship between $x$ and $y$ cannot be established.

**Q159.**

I. $2x^2 - 21x + 52 = 0$

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

(a) $x > y$

(b) $x \leq y$

(c) $x \geq y$

(d) $x < y$

(e) Relationship between $x$ and $y$ cannot be established

**Q160.**

I. $3x^2 - 13x + 14 = 0$

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

(a) $x > y$

(b) $x \leq y$

(c) $x \geq y$

(d) $x < y$

(e) Relationship between $x$ and $y$ cannot be established

**Q161.**

I. $4x^2 - 8x + 3 = 0$

II. $4y^2 - 15y + 14 = 0$

(a) $x > y$

(b) $x \leq y$

(c) $x \geq y$

(d) $x < y$

(e) Relationship between $x$ and $y$ cannot be established

**Q162.**

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

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

(a) $x > y$

(b) $x \leq y$

(c) $x \geq y$

(d) $x < y$

(e) Relationship between $x$ and $y$ cannot be established

**Q163.**

I. $4x^2 + 19x + 22 = 0$

II. $2y^2 + 11y + 15 = 0$

(a) $x > y$

(b) $x \leq y$

(c) $x \geq y$

(d) $x < y$

(e) Relationship between $x$ and $y$ cannot be established

**Q164.**

I. $4q^2 + 8q = 4q + 8$

II. $p^2 + 5p = 2p - 12$

(a) $x > y$

(b) $x \leq y$

(c) $x \geq y$

**Q165.** Directions: In the following question two equations numbered I and II are given. You have to solve both the equations and give answer.

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

II. $4y^2 = 9$

(a) $p = q$

(b) $p > q$

(c) $q > p$

(d) $p \geq q$ and

(e) $q \geq p$

**Q166.**

I. $4x^2 - 4x - 3 = 0$

II. $4y^2 + 12y + 5 = 0$

(a) $x < y$

(b) $x \leq y$

(c) $x = y$

(d) $x > y$

(e) $x \geq y$

**Q167.**

I. $4x^2 = 49$

II. $9y^2 - 66y + 121 = 0$

(a) $x < y$

(b) $x \leq y$

(c) $x = y$

(d) $x > y$

(e) $x \geq y$

**Q168.**

I. $x^2 + 9x + 14 = 0$

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

(a) $x < y$

(b) $x \leq y$

(c) $x = y$

(d) $x > y$

(e) $x \geq y$

**Q169.**

I. $9x^2 - 18x + 5 = 0$

II. $2y^2 - 9y + 10 = 0$

(a) $x < y$

(b) $x \leq y$

(c) $x = y$

(d) $x > y$

(e) $x \geq y$

**Q170.**

I. $6p^2 + 5p + 1 = 0$

II. $20q^2 + 9q = -1$

(a) $p$ is greater than $q$.

(b) $p$ is smaller than $q$.

(c) $p$ is equal to $q$.

(d) $p$ is either equal to or greater than $q$.

(e) $p$ is either equal to or smaller than $q$.  

**Q171.**
II. $3p^2 + 15p = -18$
I. $9q^2 - 2q = 3q + 12 + 4 = 0$
(a) $p$ is greater than $q$.
(b) $p$ is smaller than $q$.
(c) $p$ is equal to $q$.
(d) $p$ is either equal to or greater than $q$.
(e) $p$ is either equal to or smaller than $q$.

Q173.
II. $p^2 + 13p + 42 = 0$
I. $q^2 + 7q = 36$
(a) $p$ is greater than $q$.
(b) $p$ is smaller than $q$.
(c) $p$ is equal to $q$.
(d) $p$ is either equal to or greater than $q$.
(e) $p$ is either equal to or smaller than $q$.

Q174.
II. $p^2 + 15p = -18$
I. $q^2 + 7q + 12 = 0$
(a) $p$ is greater than $q$.
(b) $p$ is smaller than $q$.
(c) $p$ is equal to $q$.
(d) $p$ is either equal to or greater than $q$.
(e) $p$ is either equal to or smaller than $q$.

Q175.
II. $a^2 + 5a + 6 = 0$
I. $b^2 + 3b + 2 = 0$
(a) $a < b$
(b) $a > b$
(c) relationship between $a$ & $b$ cannot be established
(d) $a \geq b$
(e) $a \leq b$

Q176.
II. $2a^2 + 7b + 1 = 0$
I. $a^2 = 4$
(a) $a < b$
(b) $a > b$
(c) relationship between $a$ & $b$ cannot be established
(d) $a \geq b$
(e) $a \leq b$

Q177.
II. $a^2 - 25a + 25 = 0$
I. $12b^2 - 16b + 4 = 0$
(a) $a < b$
(b) $a > b$
(c) relationship between $a$ & $b$ cannot be established
(d) $a \geq b$
(e) $a \leq b$

Q178.
II. $2b^2 - 5b + 3 = 0$
I. $p^2 - 7p = -12$
(a) $p < q$
(b) $p > q$
(c) $p < q$
(d) $p > q$ and
(e) $q > p$

Q179.
II. $4a^2 - 20a + 21 = 0$
I. $p^2 + 24 = 10p$
II. $2q^2 + 18 = 12q$
(a) $p = q$
(b) $p > q$
(c) $p < q$
(d) $p > q$ and
(e) $q > p$

Q180.
II. $p^2 + 10p + 16 = 0$
I. $q^2 + q = 2$
II. $2p^2 + 12p + 16 = 0$
(a) $p = q$
(b) $p > q$
(c) $p < q$
(d) $p > q$ and
(e) $q > p$

Q181.
II. $4q^2 + 64 = 32q$
I. $p^2 + 16 = 8p$
II. $4q^2 + 64 = 32q$
(a) $p = q$
(b) $p > q$
(c) $p < q$
(d) $p > q$ and
(e) $q > p$

Q182.
II. $2p^2 + 14q + 24 = 0$;
I. $p^2 - 7p = -12$
II. $q^2 - 3q + 2 = 0$
(a) $p < q$
(b) $p > q$
(c) $p < q$
(d) $p > q$ and
(e) $q > p$

Q183.
II. $p^2 - 7p = -12$
I. $p^2 - 7p = -12$
II. $q^2 - 3q + 2 = 0$
(a) $p < q$
(b) $p > q$
(c) $p < q$
(d) $p > q$ and
(e) $q > p$

Q184.
\begin{align*}
&\text{(b) } p > q \\
&\text{(c) } p \leq q \\
&\text{(d) } p \geq q \\
&\text{(e) } p = q \\
\text{Q185.} \\
&\text{I. } 12p^2 - 7p = -1 \\
&\text{II. } 6q^2 - 7q + 2 = 0 \\
&\begin{align*}
&\text{(a) } p < q \\
&\text{(b) } p > q \\
&\text{(c) } p \leq q \\
&\text{(d) } p \geq q \\
&\text{(e) } p = q
\end{align*}
\end{align*}

\begin{align*}
&\text{Q186.} \\
&\text{I. } p^2 + 12p + 35 = 0 \\
&\text{II. } 2q^2 + 22q + 56 = 0 \\
&\begin{align*}
&\text{(a) } p < q \\
&\text{(b) } p > q \\
&\text{(c) } p \leq q \\
&\text{(d) } p \geq q \\
&\text{(e) } p = q
\end{align*}
\end{align*}

\begin{align*}
&\text{Q187.} \\
&\text{I. } p^2 - 8p + 15 = 0 \\
&\text{II. } q^2 - 5q = -6 \\
&\begin{align*}
&\text{(a) } p < q \\
&\text{(b) } p > q \\
&\text{(c) } p \leq q \\
&\text{(d) } p \geq q \\
&\text{(e) } p = q
\end{align*}
\end{align*}

\begin{align*}
&\text{Q188.} \\
&\text{I. } 2p^2 + 20p + 50 = 0 \\
&\text{II. } q^2 = 25 \\
&\begin{align*}
&\text{(a) } p < q \\
&\text{(b) } p > q \\
&\text{(c) } p \leq q \\
&\text{(d) } p \geq q \\
&\text{(e) } p = q
\end{align*}
\end{align*}

\begin{align*}
&\text{Q189.} \\
&\text{I. } 3x^2 + 14x + 15 = 0 \\
&\text{II. } 6y^2 + 17y + 12 = 0 \\
&\begin{align*}
&\text{(a) } x > y \\
&\text{(b) } x \geq y \\
&\text{(c) } x < y \\
&\text{(d) } x \leq y \\
&\text{(e) } x = y \text{ or the relationship cannot be established.}
\end{align*}
\end{align*}

\begin{align*}
&\text{Q190.} \\
&\text{I. } 3x^2 - 17x + 24 = 0 \\
&\text{II. } 4y^2 - 15y + 14 = 0: \\
&\begin{align*}
&\text{(a) } x > y \\
&\text{(b) } x \geq y \\
&\text{(c) } x < y \\
&\text{(d) } x \leq y \\
&\text{(e) } x = y \text{ or the relationship cannot be established.}
\end{align*}
\end{align*}

\begin{align*}
&\text{Q191.} \\
&\text{I. } 3x^2 + 13x + 12 = 0 \\
&\text{II. } 2y^2 + 15y + 27 = 0 \\
&\begin{align*}
&\text{(a) } x > y \\
&\text{(b) } x \geq y \\
&\text{(c) } x < y \\
&\text{(d) } x \leq y \\
&\text{(e) } x = y \text{ or the relationship cannot be established.}
\end{align*}
\end{align*}

\begin{align*}
&\text{Q192.} \\
&\text{I. } 3x^2 + 13x + 12 = 0 \\
&\text{II. } 2y^2 + 15y + 27 = 0 \\
&\begin{align*}
&\text{(a) } x > y \\
&\text{(b) } x \geq y \\
&\text{(c) } x < y \\
&\text{(d) } x \leq y \\
&\text{(e) } x = y \text{ or the relationship cannot be established.}
\end{align*}
\end{align*}

\begin{align*}
&\text{Q193.} \\
&\text{I. } x^2 - 22x + 121 = 0 \\
&\text{II. } y^2 = 121 \\
&\begin{align*}
&\text{(a) } x > y \\
&\text{(b) } x \geq y \\
&\text{(c) } x < y \\
&\text{(d) } x \leq y \\
&\text{(e) } x = y \text{ or the relationship cannot be established.}
\end{align*}
\end{align*}

\begin{align*}
&\text{Q194.} \\
&\text{I. } 4x^2 + 17x + 15 = 0 \\
&\text{II. } 3y^2 + 19y + 28 = 0 \\
&\begin{align*}
&\text{(a) } x \geq y \\
&\text{(b) } x \leq y \\
&\text{(c) } x > y \\
&\text{(d) } x < y \\
&\text{(e) } \text{relationship between } x \text{ and } y \text{ cannot be established.}
\end{align*}
\end{align*}

\begin{align*}
&\text{Q195.} \\
&\text{I. } 5x^2 - 17x + 22 = 0 \\
&\text{II. } 5y^2 - 21y + 22 = 0 \\
&\begin{align*}
&\text{(a) } x \leq y \\
&\text{(b) } x \geq y \\
&\text{(c) } x > y \\
&\text{(d) } x < y \\
&\text{(e) } \text{relationship between } x \text{ and } y \text{ cannot be established.}
\end{align*}
\end{align*}

\begin{align*}
&\text{Q196.} \\
&\text{I. } 3x^2 + 11x + 10 = 0 \\
&\text{II. } 2y^2 + 13y + 21 = 0 \\
&\begin{align*}
&\text{(a) } x \geq y \\
&\text{(b) } x \leq y \\
&\text{(c) } x > y \\
&\text{(d) } x < y \\
&\text{(e) } \text{relationship between } x \text{ and } y \text{ cannot be established.}
\end{align*}
\end{align*}

\begin{align*}
&\text{Q197.} \\
&\text{I. } 3x^2 + 13x + 14 = 0 \\
&\text{II. } 8y^2 + 26y + 21 = 0 \\
&\begin{align*}
&\text{(a) } x \geq y \\
&\text{(b) } x \leq y \\
\end{align*}
\end{align*}
(c) \(x > y\)  
(d) \(x < y\)  
(e) relationship be-tween \(x\) and \(y\) cannot be established

**Q198.**  
I. \(3x^2 - 14x + 15 = 0\)  
II. \(15y^2 - 34y + 15 = 0\)  
(a) \(x \geq y\)  
(b) \(x \leq y\)  
(c) \(x > y\)  
(d) \(x < y\)  
(e) relationship be-tween \(x\) and \(y\) cannot be established

**Q199.**  
I. \(3x\)  
II. \(2y\)  
(a) \(x \geq y\)  
(b) \(x \leq y\)  
(c) \(x > y\)  
(d) \(x < y\)  
(e) relationship be-tween \(x\) and \(y\) cannot be established

**Q200.**  
I. \(2x^2 + 23x + 63 = 0\)  
II. \(4y^2 + 19y + 21 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q201.**  
I. \(3x^2 + 29x + 56 = 0\)  
II. \(2y^2 + 15y + 25 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q202.**  
I. \(4x^2 - 29x + 45 = 0\)  
II. \(3y^2 - 19y + 28 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q203.**  
I. \(2x^2 - 13x + 21 = 0\)  
II. \(5y^2 - 22y + 21 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(e) \(x = y\) or the relation-ship cannot be established

**Q204.**  
I. \(x^2 + 3x + 2 = 0\)  
II. \(2y^2 = 5y\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q205.**  
I. \(2x^2 + 5x + 2 = 0\)  
II. \(4y^2 = 1\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q206.**  
I. \(y^2 + 2y - 3 = 0\)  
II. \(2x^2 - 7x + 6 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q207.**  
I. \(x^2 - 5x + 6 = 0\)  
II. \(y^2 + y - 6 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q208.**  
I. \(x^2 - 2 - 7 = 0\)  
II. \(y^2 + y - 6 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q209.**  
I. \(x^2 - 5x + 45 = 0\)  
II. \(y^2 + 3y + 2 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established

**Q210.**  
I. \(x^2 - 10x + 24 = 0\)  
II. \(x^2 - 10x + 24 = 0\)  
(a) \(x < y\)  
(b) \(x > y\)  
(c) \(x \leq y\)  
(d) \(x \geq y\)  
(e) \(x = y\)  
or relationship be-tween \(x\) and \(y\) cannot be established
II. \( y^2 - 9y + 20 = 0 \)

(a) \( x > y \)

(b) \( x \geq y \)

(c) \( x < y \)

(d) \( x \leq y \)

(e) \( x = y \) or the relation-ship cannot be established

Q211.

I. \( (x)^2 = 961 \)

(a) \( x > y \)

(b) \( x \geq y \)

(c) \( x < y \)

(d) \( x \leq y \)

(e) \( x = y \) or the relation-ship cannot be established

Q212.

II. \( y^2 = 64 \)

(a) \( x > y \)

(b) \( x \geq y \)

(c) \( x < y \)

(d) \( x \leq y \)

(e) \( x = y \) or the relation-ship cannot be established

Q213.

Directions: In the following question three equations numbered I, II and III are given. You have to solve both the equations and give answer thereof.

I. \( x^2 - 72 = x \)

II. \( y^2 = 321 \)

(a) \( x > y \)

(b) \( x \geq y \)

(c) \( x < y \)

(d) \( x \leq y \)

(e) \( x = y \) or the relation-ship cannot be established

Q214.

Directions: In the following question three equations numbered I, II and III are given. You have to solve both the equations and give answer thereof.

I. \( 7x + 6y + 4z = 122 \)

II. \( 4x + 5y + 3z = 88 \)

II. \( 9x + 2y + z = 78 \)

(a) \( x > y \)

(b) \( x \geq y \)

(c) \( x < y \)

(d) \( x \leq y \)

(e) \( x = y \) or the relation-ship cannot be established

Q215.

Directions: In the following question three equations numbered I, II and III are given. You have to solve both the equations and give answer thereof.

I. \( 3x^2 + 11x + 1 = 0 \)

II. \( 42y^2 + 13y + 1 = 0 \)

II. \( 15x + 6y = 99 \)

(a) \( x < y \)

(b) \( x \leq y \)

(c) \( x = y \) or the relation-ship cannot be established

(d) \( x \geq y \)

(e) \( x > y \)

Q216.

Directions: In the following question three equations numbered I, II and III are given. You have to solve both the equations and give answer thereof. \( 8x + 7y = 135 \)

II. \( 5x + 6y = 99 \)

II. \( 9y + 8z = 121 \)

(a) \( x < y \)

(b) \( x \leq y \)

(c) \( x < y \)

(d) \( x \geq y \)

(e) \( x = y \) or none of the above relationships is established

Q217.

Directions: In the following question three equations numbered I, II and III are given. You have to solve both the equations and give answer thereof. \( 8x + 7y = 135 \)

II. \( 5x + 6y = 99 \)

II. \( 9y + 8z = 121 \)

(a) \( x < y \)

(b) \( x \leq y \)

(c) \( x < y \)

(d) \( x \geq y \)

(e) \( x = y \) or none of the above relationships is established

Q218.

Directions: In the following question three equations numbered I, II and III are given. You have to solve both the equations and give answer thereof. \( x^2 - \sqrt{2}x + \sqrt{2} = 0 \)

II. \( y^2 - \sqrt{3}y - \sqrt{2}y + \sqrt{6} = 0 \)

II. \( x^2 - 2x - \sqrt{5}x + 2 \sqrt{5} = 0 \)

(a) \( x < y \)

(b) \( x \leq y \)

(c) \( x = y \) or the relation-ship cannot be established

(d) \( x \geq y \)

(e) \( x > y \)

Q219.

Directions: In the following question three equations numbered I, II and III are given. You have to solve both the equations and give answer thereof.

I. \( 7x + 6y = 110 \)

II. \( 4x + 3y = 59 \)

II. \( x + z = 15 \)

(a) \( x < y \)

(b) \( x \leq y \)

(c) \( x < y \)

(d) \( x \geq y \)

(e) \( x = y \) or none of the above relationships is established

Q220.
Q222.
I. $9x^2 + 3x - 2 = 0$
II. $8y^2 + 6y + 1 = 0$
(a) $x < y$
(b) $x > y$
(c) $x = y$ or the relation cannot be established
(d) $x = y$
(e) $x > y$

Q223.
I. $4x^2 + 16x + 15 = 0$
II. $4y^2 + 17y + 18 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \leq y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q224.
I. $4x^2 + 7x + 12 = 0$
II. $y^2 + 5y + 6 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \leq y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q225.
I. $64x^2 - 64x + 15 = 0$
II. $21y^2 - 13y + 2 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \leq y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q226.
I. $15x^2 - 19x + 6 = 0$
II. $45y^2 - 47y + 12 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \leq y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q227.
I. $1.2x^2 + 5x + 2 = 0$
II. $12y^2 + 7y + 1 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established

Q234.

I. $2x^2 + 9x + 7 = 0$
II. $2y^2 + 9y + 10 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established

Q235.

I. $9x^2 - 33x + 28 = 0$
II. $6y^2 - 25y + 25 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established

Q236.

I. $9x^2 - 36x + 35 = 0$
II. $4y^2 - 7y - 2 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established

Q237.

I. $x^2 + 7x + 12 = 0$
II. $2y^2 + 11y + 15 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or the relationship cannot be established

Q238.

I. $2x^2 - 7x + 3 = 0$
II. $2y^2 - 7y + 6 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \geq y$
(d) $x \leq y$
(e) $x = y$ or the relationship between $x$ and $y$ cannot be established.

Q239.

I. $4x^2 + 16x + 15 = 0$
II. $2y^2 + 3y + 1 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \geq y$
(d) $x \leq y$
(e) $x = y$ or the relationship between $x$ and $y$ cannot be established.

Q240.

I. $9x^2 - 45x + 56 = 0$
II. $4y^2 - 17y + 18 = 0$
(a) (a) $x < y$
(b) $x > y$
(c) $x \geq y$
(d) $x \leq y$
(e) $x = y$ or the relationship between $x$ and $y$ cannot be established.

Q241.

I. $2x^2 + 11x + 14 = 0$
II. $2y^2 + 15y + 28 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \geq y$
(d) $x \leq y$
(e) relationship between $x$ and $y$ cannot be established.

Q242.

I. $6x^2 + 11x + 14 = 0$
II. $4y^2 - 7y - 2 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \geq y$
(d) $x \leq y$
(e) relationship between $x$ and $y$ cannot be established.

Q243.

I. $3x^2 + 7x + 2 = 0$
II. $y^2 + 5y + 6 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \geq y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q244.

I. $2x^2 - 13x + 21 = 0$
II. $2y^2 - 9y + 10 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \geq y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q245.

I. $3x^2 - 14x + 15 = 0$
II. $2y^2 - 9y + 9 = 0$
(a) $x < y$
(b) $x > y$
(c) $x \geq y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established.

Q246.

I. $3x^2 - 10x + 8 = 0$
II. $2y^2 - 11y + 15 = 0$
Q247. I. \( x^2 = 25 \)
   II. \( y^2 - 6y + 9 = 0 \)
   (a) \( x < y \)
   (b) \( x > y \)
   (c) \( x \geq y \)
   (d) \( x \leq y \)
   (e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established.

Q248. I. \( x^2 = 10 \)
   II. \( y^2 - 9y + 20 = 0 \)
   (a) \( x < y \)
   (b) \( x > y \)
   (c) \( x \geq y \)
   (d) \( x \leq y \)
   (e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established.

Q249. I. \( 2x^2 - 15x + 27 = 0 \)
   II. \( 2y^2 - 13y + 20 = 0 \)
   (a) \( x < y \)
   (b) \( x > y \)
   (c) \( x \geq y \)
   (d) \( x \leq y \)
   (e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established.

Q250. Directions: In the following question two equations numbered I and II are given. You have to solve both the equations and give answer thereof.
   I. \( 9x^2 - 21x + 10 = 0 \)
   II. \( y^2 - 8y + 15 = 0 \)
   (a) \( x < y \)
   (b) \( x > y \)
   (c) \( x \geq y \)
   (d) \( x \leq y \)
   (e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established.

Q251. I. \( 2x^2 - 13x + 15 = 0 \)
   II. \( 2y^2 - 11y + 12 = 0 \)
   (a) \( x < y \)
   (b) \( x > y \)
   (c) \( x \geq y \)
   (d) \( x \leq y \)
   (e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established.

Q252. I. \( 2x^2 + 7x + 6 = 0 \)
   II. \( 2y^2 + 17y + 30 = 0 \)
   (a) \( x < y \)
   (b) \( x > y \)
   (c) \( x \geq y \)
   (d) \( x \leq y \)
   (e) \( x = y \) or relationship between \( x \) and \( y \) cannot be established.

Q253. I. \( p^2 + 5p + 6 = 0 \)
   II. \( q^2 + 3q + 2 = 0 \)
   (a) \( p \) is greater, than \( q \)
   (b) \( p \) is smaller than \( q \)
   (c) \( p \) is equal to \( q \)
   (d) \( p \) is either equal to or greater than \( q \)
   (e) \( p \) is either equal to or smaller than \( q \).

Q254. I. \( p^2 = 4 \)
   II. \( q^2 + 4q = -4 \)
   (a) \( p \) is greater, than \( q \)
   (b) \( p \) is smaller than \( q \)
   (c) \( p \) is equal to \( q \)
   (d) \( p \) is either equal to or greater than \( q \)
   (e) \( p \) is either equal to or smaller than \( q \).

Q255. \( p^2 - 4p = 56 \)
   II. \( q^2 - 17q + 72 = 0 \)
   (a) \( p \) is greater, than \( q \)
   (b) \( p \) is smaller than \( q \)
   (c) \( p \) is equal to \( q \)
   (d) \( p \) is either equal to or greater than \( q \)
   (e) \( p \) is either equal to or smaller than \( q \).

Q256. I. \( 3p + 2q - 58 = 0 \)
   II. \( 4q + 4p = 92 \)
   (a) \( p \) is greater, than \( q \)
   (b) \( p \) is smaller than \( q \)
   (c) \( p \) is equal to \( q \)
   (d) \( p \) is either equal to or greater than \( q \)
   (e) \( p \) is either equal to or smaller than \( q \).

Q257. I. \( 3p^2 + 17p + 10 = 0 \)
   II. \( 10q^2 + 9q + 2 = 0 \)
   (a) \( p \) is greater, than \( q \)
   (b) \( p \) is smaller than \( q \)
   (c) \( p \) is equal to \( q \)
   (d) \( p \) is either equal to or greater than \( q \)
   (e) \( p \) is either equal to or smaller than \( q \).

Q258. I. \( 4x^2 - 8x + 3 = 0 \)
   II. \( 2y^2 - 7y + 6 = 0 \)
   (a) \( x < y \)
Q259.
I. $x^2 + x - 6 = 0$
II. $2y^2 - 13y + 21 = 0$
(a) $x < y$
(b) $x \leq y$
(c) $x = y$
(d) $x \geq y$
(e) $x > y$

Q260.
I. $x^2 - x - 6 = 0$
II. $2y^2 + 13y + 21 = 0$
(a) $x < y$
(b) $x \leq y$
(c) $x = y$
(d) $x \geq y$
(e) $x > y$

Q261.
I. $x^2 = 4$
II. $y^2 + 6y + 9 = 0$
(a) $x < y$
(b) $x \leq y$
(c) $x = y$
(d) $x \geq y$
(e) $x > y$

Q262.
I. $2x + 3y = 4$
II. $3x + 2y = 11$
(a) $x < y$
(b) $x \leq y$
(c) $x = y$
(d) $x \geq y$
(e) $x > y$

Q263.
I. $4x + 2y = 51$
II. $15y + 13x = 221$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q264.
I. $8x^2 + 3x = 38$
II. $6y^2 + 34 = 29y$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q265.
I. $x^2 + 91 = 20x$
II. $10y^2 - 29y + 21 = 0$
(a) $x > y$
(b) $x \leq y$
(c) $x < y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q266.
I. $6x^2 + 13x + 5 = 0$
II. $9y^2 + 22y + 8 = 0$
(a) $x > y$
(b) $x \leq y$
(c) $x < y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q267.
I. $(x+y)^2 = 784$
II. $92551 = 92567 - y$
(a) $x > y$
(b) $x \leq y$
(c) $x < y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q268.
I. $x^2 - 14x + 48 = 0$
II. $y^2 + 6 = 5y$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q269.
I. $x^2 + 9x + 20 = 0$
II. $y^2 + 7y + 12 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q270.
I. $x^2 = 529$
II. $y^2 = \sqrt{529}$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
Q271.

I. $x^2 + 13x = -42$
II. $y^2 + 16y + 63 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q272.

I. $2x + 3y$
II. $4x + 2y = 16$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q273.

I. $x^2 - 1 = 0$
II. $y^2 + 4y + 3 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q274.

I. $x^2 - 7x + 12 = 0$
II. $y^2 - 12y + 32 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q275.

I. $x^3 - 371 = 629$
II. $y^3 - 543 = 788$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q276.

I. $5x + 2y = 31$
II. $3x + 7y = 36$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$

Q277.

I. $2x^2 + 11x + 12 = 0$
II. $5y^2 + 27y + 10 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q278.

I. $2x^2 + 11x + 14 = 0$
II. $4y^2 + 12y + 9 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q279.

I. $x^2 - 4 = 0$
II. $y^2 + 6y + 9 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q280.

I. $x^2 - 7x + 12 = 0$
II. $y^2 + y - 12 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q281.

I. $x^3 - 729$
II. $y = \sqrt{729}$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q282.

I. $x^2 - 227 = 398$
II. $y^2 + 321 = 346$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q283.**

I. $x^2 - x - 12 = 0$
II. $y^2 + 5y + 6 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q284.**

I. $x^2 - 8x + 15 = 0$
II. $y^2 - 3y + 2 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q285.**

I. $x^2 - 32 = 112$
II. $y^2 - 121 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q286.**

I. $x - \sqrt{121} = 0$
II. $y^2 - 121 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q287.**

I. $x^2 - 16 = 0$
II. $y^2 - 9y + 20 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q288.**

I. $3x + 8x + 4 = 0$
II. $4y^2 - 19y + 12 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q289.**

I. $x^2 + x - 20 = 0$
II. $y^2 - y - 30 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q290.**

I. $x^2 - 365 = 364$
II. $\sqrt{y} - \sqrt{324} = \sqrt{81}$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q291.**

I. $225x^2 - 4 = 0$
II. $\sqrt{225y} + 2 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q292.**

Directions (43-47): In the following questions two equations numbered I and II are given. You have to solve both the equations and — Give answer

I. $5x^2 - 18x + 9 = 0$
II. $20y^2 - 13y + 2 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q293.**

I. $x^2 - 878 = 453$
II. $y^2 - 82 = 39$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

**Q294.**
I. $9x - 15.45 = 54.55 + 4x$
II. $\sqrt{(y + 155)} - \sqrt{36} = \sqrt{49}$
(a) $x > y$
(b) $x \leq y$
(c) $x < y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q295.

I. $x^2 + 11x + 30 = 0$
II. $y^2 + 7y + 12 = 0$
(a) $x > y$
(b) $x \leq y$
(c) $x < y$
(d) $x \geq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q296.

I. $3x - 2y = 10$
II. $5x - 6y = 6$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established

Q297.

I. $x^2 + x - 12 = 0$
II. $y^2 - 5y + 6 = 0$
(a) $x > y$
(b) $x \geq y$
(c) $x < y$
(d) $x \leq y$
(e) $x = y$ or relationship between $x$ and $y$ cannot be established
| ANSWERS: | 127 c 128 d 129 c 130 a 131 c 132 b |
|          | 133 c 134 e 135 c 136 c 137 e 138 b |
|          | 139 d 140 b 141 a 142 a 143 c 144 d |
| 1 e      | 2 d 3 b 4 a 5 b 6 b |
| 7 a      | 8 e 9 e 10 e 11 a 12 b |
| 13 a     | 14 e 15 c 16 a 17 d 18 e |
| 19 b     | 20 c 21 b 22 d 23 c 24 a |
| 25 e     | 26 c 27 a 28 b 29 d 30 e |
| 31 b     | 32 a 33 c 34 a 35 d 36 c |
| 37 d     | 38 d 39 e 40 a 41 b 42 e |
| 43 c     | 44 a 45 d 46 c 47 b 48 e |
| 49 a     | 50 d 51 c 52 c 53 b 54 d |
| 55 c     | 56 e 57 d 58 e 59 a 60 c |
| 61 b     | 62 e 63 b 64 c 65 c 66 c |
| 67 b     | 68 d 69 c 70 a 71 e 72 a |
| 73 c     | 74 a 75 a 76 b 77 a 78 d |
| 79 b     | 80 a 81 a 82 e 83 c 84 c |
| 85 a     | 86 d 87 d 88 b 89 d 90 a |
| 91 d     | 92 e 93 b 94 d 95 b 96 b |
| 97 a     | 98 c 99 d 100 c 101 d 102 b |
| 103 a    | 104 b 105 e 106 b 107 d 108 e |
| 109 a    | 110 a 111 e 112 a 113 b 114 d |
| 115 b    | 116 d 117 e 118 a 119 c 120 b |
| 121 c    | 122 c 123 a 124 e 125 e 126 e |
|          | 127 c 128 d 129 c 130 a 131 c 132 b |
|          | 133 c 134 e 135 c 136 c 137 e 138 b |
|          | 139 d 140 b 141 a 142 a 143 c 144 d |

265 a 266 e 267 c 268 a 269 d 270 e
271 b 272 c 273 b 274 d 275 c 276 a
277 e 278 c 279 a 280 b 281 d 282 e
283 b 284 a 285 c 286 a 287 d 288 c
289 d 290 d 291 e 292 a 293 b 294 e
295 c 296 a 297 d 298 c 299 b 300 e