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Quadratic Eqn Questions for RBI Asst. Pre, IBPS Clerk Pre and SBI Clerk Pre Exams

Quadratic Eqn Quiz 33

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

1. **I. $2x^2 - 9x + 10 = 0$**

   II. $2y^2 - 13y + 21 = 0$

   A. if x > y B. if x ≤ y C. if x ≥ y

   D. if x < y E. if x = y or relationship between x and y can't be established

2. **I. $x^2 + 4x + 3 = 0$**

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

   A. if x > y B. if x ≤ y C. if x ≥ y

   D. if x < y E. if x = y or relationship between x and y can't be established

3. **I. $x^2 - 196 = 0$**

   II. $y - \sqrt{196} = 0$

   A. if x > y B. if x ≤ y C. if x ≥ y

   D. if x < y E. if x = y or relationship between x and y can't be established

4. **I. $5x - 2y = 28$**

II. $x + 2y = -16$

A. if $x > y$ B. if $x \leq y$ C. if $x \geq y$

D. if $x < y$ E. if $x = y$ or relationship between x and y can't be established

5. **I. $x^3 - 343 = 0$**

II. $y^2 + \sqrt{225} = 31$

A. if $x > y$ B. if $x \leq y$ C. if $x \geq y$

D. if $x < y$ E. if $x = y$ or relationship between x and y can't be established

6. **I. $x^2 - 324 = 0$**

II. $y^3 - 2744 = 0$

A. if $x > y$ B. if $x \leq y$ C. if $x \geq y$

D. if $x < y$ E. if $x = y$ or relationship between x and y can't be established

7. **I. $3x + 7y = 11$**

II. $4x + 9y = 13$

A. if $x > y$ B. if $x \leq y$ C. if $x \geq y$

D. if $x < y$ E. if $x = y$ or relationship between x and y can't be established

8. **I. $x^2 - 11x + 28 = 0$**

II. $y^2 - 20y + 91 = 0$

A. if $x > y$ B. if $x \leq y$ C. if $x \geq y$

D. if $x < y$ E. if $x = y$ or relationship between x and y can't be established

9. **I. $2x^2 + x - 15 = 0$**

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

A. if x > y B. if x ≤ y C. if x ≥ y

D. if x < y E. if x = y or relationship between x and y can't be established

10. **I. $x^2 - 1296 = 0$**

II. $y = \sqrt{1296}$

A. if x > y B. if x ≤ y C. if x ≥ y

D. if x < y E. if x = y or relationship between x and y can't be established

Correct Answers:

1	2	3	4	5	6	7	8	9	10
D	E	B	A	A	E	D	B	E	B

Explanation:

1. **I.** $2x^2 - 9x + 10 = 0$

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

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

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

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

II. $2y^2 - 13y + 21 = 0$

$2y^2 - 6y - 7y + 21 = 0$

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

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

$y = 3, \frac{7}{2}$

While comparing the root values of x and y, we find that both the root values of x are less than the values of y. Therefore, $x < y$

Hence, option D is correct.

2. **I.** $x^2 + 4x + 3 = 0$

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

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

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

$x = -1, -3$

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

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

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

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

$y = -4, 3$

While comparing the root values of x and y, we find that both the root values of x lies between the values of y's. Therefore, the relationship cannot be established

Hence, option E is correct.

3. **I.** $x^2 - 196 = 0$

$x^2 = 196$

$x = 14, -14$

II. $y - \sqrt{196} = 0$

$y = \sqrt{196}$

$y = 14$

While comparing the root values of x and y, we find that one root value of x is equal to y and another one is less than the y's. Therefore, $x \leq y$.

Hence, option B is correct.

4. $5x - 2y = 28$....(I)

$x + 2y = -16$....(II)

Eqn. (I) + Eqn. (II),

$6x = 12$

$x = 2$

Substitute x = 2 in Eqn. (I),

5 (2) – 2y = 28

10 – 2y = 28

– 2y = 18

y = – 9

Therefore, x > y

Hence, option A is correct.

5. **I.** $x^3 - 343 = 0$

$x^3 = 343$

x = 7

II. $y^2 + \sqrt{225} = 31$

$y^2 = 31 - 15$

$y^2 = 16$

y = 4, – 4

Therefore, x > y

Hence, option A is correct.

6. **I.** $x^2 - 324 = 0$

$x^2 = 324$

∴ x = ± 18

II. $y^3 - 2744 = 0$

$y^3 = 2744$

∴ y = 14

While comparing the root values of x and y, we find that root value of y lies between the values of x. Therefore, relationship between x and y can't be established.

Hence, option E is correct.

7. **I.** $3x + 7y = 11$

II. $4x + 9y = 13$

Multiply in eq. (i) × 4 and (ii) × 3

$12x + 28y = 44$
$12x + 27y = 39$
$\underline{\quad - \quad - \quad - \quad}$
$y = 5$

Putting the value in eq. (i)

$3x + 7 \times 5 = 11$

$3x + 35 = 11$

$3x = 11 - 35$

$x = \frac{-24}{3} = -8$

Here, $x < y$

Hence, option D is correct.

8. **I.** $x^2 - 11x + 28 = 0$

$x^2 - 4x - 7x + 28 = 0$
$x(x - 4) - 7(x - 4) = 0$

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

$x = 4, 7$

II. $y^2 - 20y + 91 = 0$

$y^2 - 13y - 7y + 91 = 0$

$y(y - 13) - 7(y - 13) = 0$

$(y - 13)(y - 7) = 0$

$y = 13, 7$

While compairng the root values of x and y, we find that one root value of x is equal to y and another one is less than y's. Therefore, $x \leq y$

Hence, option B is correct.

9. **I.** $2x^2 + x - 15 = 0$

$2x^2 + 6x - 5x - 15 = 0$
$2x(x + 3) - 5(x + 3) = 0$

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

$x = \frac{5}{2} = 2.5, -3$

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

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

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

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

$y = -2, \frac{7}{3}$

While comparing the root values of x and y, we find that both the root values of y lies between the values of x. Therefore, the relationship between x and y can't be established.
Hence, option E is correct.

10. **I.** $x^2 - 1296 = 0$

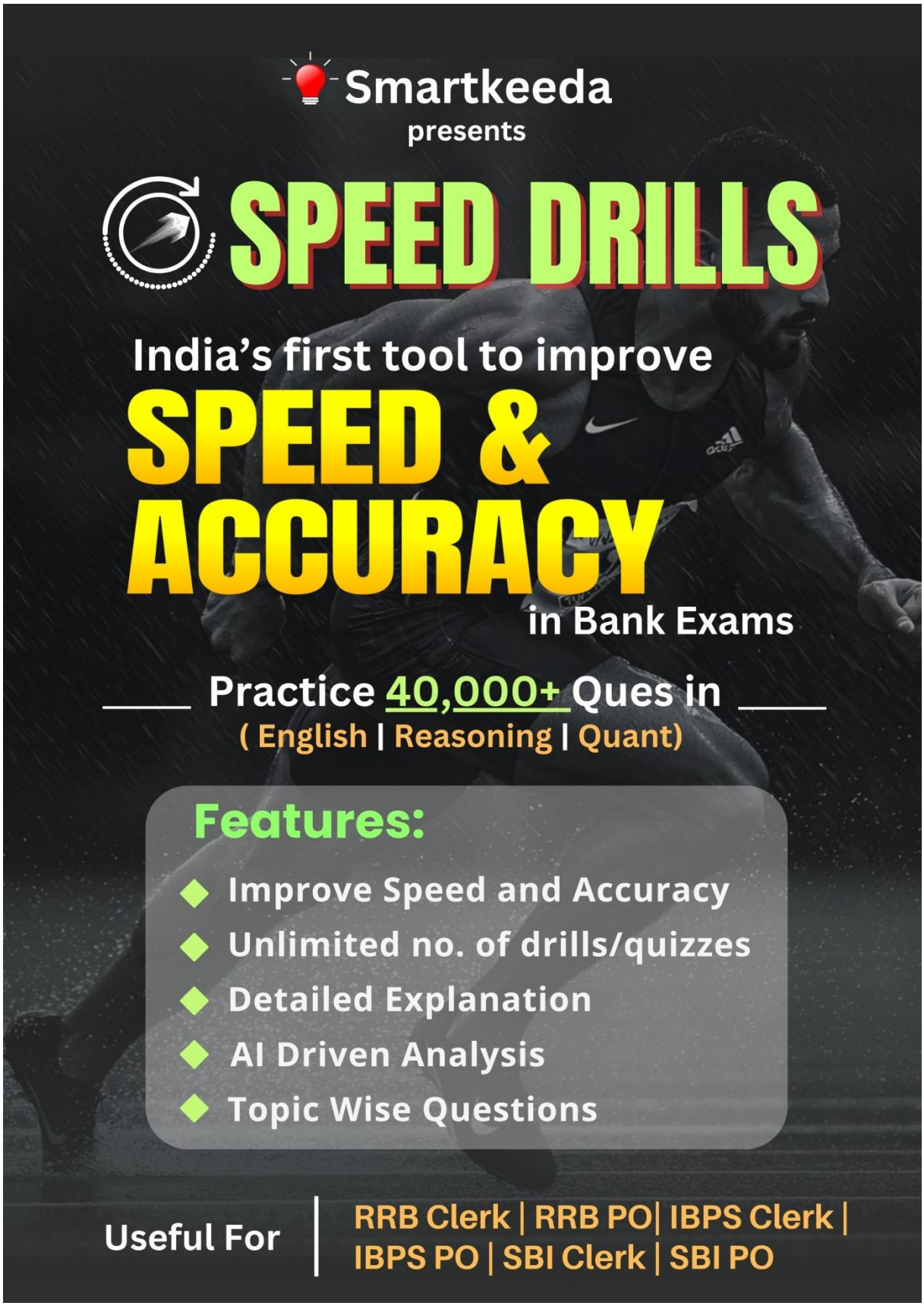
$x = \pm 36$

II. $y = \sqrt{1296}$

$y = 36$

Here, $x \leq y$

Hence, option B is correct.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