Quiz Date: 30th April 2020

Directions (1-10): In these questions, two equations numbered I and II are given. You have to solve both the equations and give answer

Q1.
I. $x^2 - 208 = 233$
II. $y^2 + 47 - 371 = 0$
(a) x ≥ y
(b) x ≤ y
(c) x < y
(d) x > y
(e) x = y or Relationship between x and y cannot be established

Q2.
I. $x^2 - 9x + 18 = 0$
II. $5y^2 - 22y + 24 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or relationship between x and y cannot be determined

Q3.
I. $6x^2 + 11x + 5 = 0$
II. $2y^2 + 5y + 3 = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or relationship between x and y cannot be determined

Q4.
I. $x^2 + 10x + 24 = 0$
II. $y^2 - \sqrt{625} = 0$
(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or relationship between x and y cannot be determined

Q5.
I. $\sqrt{500x} - \sqrt{402} = 0$
II. $\sqrt{360y} - (200)^{1/2} = 0$
(a) x ≥ y
(b) x ≤ y
(c) x < y

(d) x > y

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

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

Q6. II. $15y^2 + 8y + 1 = 0$

(a) x ≥ y

(b) x ≤ y

(c) x < y

(d) x > y

(e) Relationship between x and y cannot be established

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

**Q7.** II. $4y^2 + 24y + 35 = 0$

(a) x ≥ y

(b) x ≤ y

(c) x < y

(d) x > y

(e) Relationship between x and y cannot be established
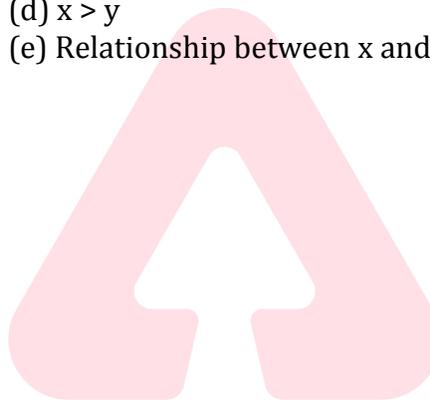
I. $2x^2 + 5x + 3 = 0$

Q8. II. $y^2 + 9y + 14 = 0$

(a) x ≥ y

(b) x ≤ y

(c) x < y

(d) x > y

(e) Relationship between x and y cannot be established

I. $88x^2 - 19x + 1 = 0$

Q9. II. $132y^2 - 23y + 1 = 0$

(a) x ≥ y

(b) x ≤ y

(c) x < y

(d) x > y

(e) Relationship between x and y cannot be established

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

Q10.   II. $20y^2 - 31y + 12 = 0$

(a) x ≥ y
(b) x ≤ y
(c) x < y
(d) x > y
(e) Relationship between x and y cannot be established

Directions (11-15): Find the approximate value of the following questions.

Q11. $8599.999 \div 420.002 \times 14.996 = ?$
(a) 250
(b) 325
(c) 275
(d) 307
(e) 315

Q12. $\sqrt{2703} - \sqrt{1156} + \sqrt{483} = ?$
(a) 50
(b) 90
(c) 40
(d) 20
(e) 30

Q13. $3001 \times 749 \div 1001 - 1399 = ?$
(a) 650
(b) 700
(c) 950
(d) 850
(e) 1000

Q14. $149.9\% \ of \ 149.9 + 149.9 = ?$
(a) 375
(b) 400
(c) 350
(d) 425
(e) 450

Q15. $\dfrac{989}{34} \div \dfrac{65}{869} \times \dfrac{515}{207} = ?$
(a) 840
(b) 920

(c) 970
(d) 780
(e) 1000

Solutions

S1. Ans.(e)
Sol.

I. $x^2 - 208 = 233$

$\Rightarrow x^2 = 441$

$\Rightarrow x = 21, - 21$

II. $y^2 + 47 - 371 = 0$

$\Rightarrow y^2 = 324$

$\Rightarrow y = 18, -18$

No relation between x and y
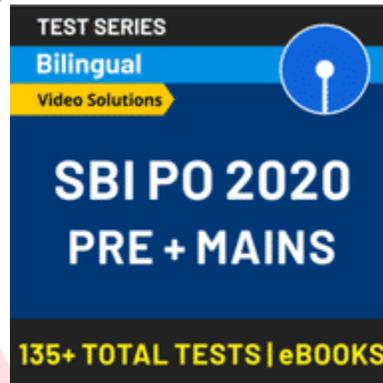
S2. Ans.(b)
Sol.

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

$x^2 - 6x - 3x + 18 = 0$

$x(x - 6) - 3(x - 6) = 0$

$(x - 3)(x - 6) = 0$

$x = 3, 6$

II. $5y^2 - 22y + 24 = 0$

$5y^2 - 10y - 12y + 24 = 0$

$5y(y - 2) - 12(y - 2) = 0$

$(y - 2)(5y - 12) = 0$

$y = 2, \frac{12}{5}$

$\therefore x > y$

S3. Ans.(d)
Sol.

I. $6x^2 + 11x + 5 = 0$
$6x^2 + 6x + 5x + 5 = 0$
$6x(x + 1) + 5(x + 1) = 0$
$(x + 1)(6x + 5) = 0$
$x = -1, -\dfrac{5}{6}$

II. $2y^2 + 5y + 3 = 0$
$2y^2 + 2y + 3y + 3 = 0$
$2y(y + 1) + 3(y + 1) = 0$
$(y + 1)(2y + 3) = 0$
$y = -1, -\dfrac{3}{2}$

$\therefore x \geq y$

S4 Ans.(e)
Sol.

I. $x^2 + 10x + 24 = 0$
$x^2 + 6x + 4x + 24 = 0$
$x(x + 6) + 4(x + 6) = 0$
$(x + 4)(x + 6) = 0$
$x = -4, -6$

II. $y^2 - \sqrt{625} = 0$
$y^2 = \sqrt{625}$
$y^2 = 25; y = \pm 5$

$\therefore$ Relationship between x and y
cannot be determined

S5. Ans.(d)
Sol.

I. $\sqrt{500x} - \sqrt{402} = 0$
$\Rightarrow 500x = 402$
$\Rightarrow x = \frac{201}{250} \simeq 0.8$
II. $\sqrt{360y} - \sqrt{200} = 0$
$\Rightarrow y = \frac{200}{360}$
$\Rightarrow y = \frac{5}{9} \simeq 0.56$
$x > y$
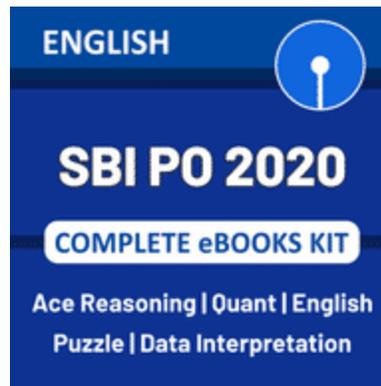
S6. Ans.(b)
Sol.
I. $6x^2 + 5x + 1 = 0$
$\Rightarrow (3x + 1)(2x + 1) = 0$
$\Rightarrow x = -\frac{1}{3}, -\frac{1}{2}$
II. $15y^2 + 8y + 1 = 0$
$\Rightarrow (3y + 1)(5y + 1) = 0$
$\Rightarrow y = -\frac{1}{3}, -\frac{1}{5}$
$\Rightarrow x \leq y$

S7. Ans.(e)
Sol.
I. $x^2 + 5x + 6 = 0$
$\Rightarrow (x + 3)(x + 2) = 0$
$\Rightarrow x = -3, -2$
II. $4y^2 + 24y + 35 = 0$
$\Rightarrow 4y^2 + 14y + 10y + 35 = 0$
$\Rightarrow (2y + 7)(2y + 5) = 0$
$\Rightarrow y = -\frac{7}{2}, -\frac{5}{2}$
No relation between x and y

S8. Ans.(d)
Sol.

I. $2x^2 + 5x + 3 = 0$
$\Rightarrow (2x + 3)(x + 1) = 0$
$\Rightarrow x = -\frac{3}{2}, -1$
II. $y^2 + 9y + 14 = 0$
$\Rightarrow (y + 7)(y + 2) = 0$
$\Rightarrow y = -7, -2$
$\Rightarrow x > y$

S9. Ans.(a)
Sol.

I. $88x^2 - 19x + 1 = 0$
$\Rightarrow (8x - 1)(11x - 1) = 0$
$\Rightarrow x = \frac{1}{8}, \frac{1}{11}$
II. $132y^2 - 23y + 1 = 0$
$\Rightarrow (11y - 1)(12y - 1) = 0$
$\Rightarrow y = \frac{1}{11}, \frac{1}{12}$
$\Rightarrow x \geq y$

S10. Ans.(c)
Sol.

I. $6x^2 - 7x + 2 = 0$
$\Rightarrow 6x^2 - 4x - 3x + 2 = 0$
$\Rightarrow (3x - 2)(2x - 1) = 0$
$\Rightarrow x = \frac{2}{3}, \frac{1}{2}$
II. $20y^2 - 31y + 12 = 0$
$\Rightarrow 20y^2 - 16y - 15y + 12 = 0$
$\Rightarrow (5y - 4)(4y - 3) = 0$
$\Rightarrow y = \frac{4}{5}, \frac{3}{4}$
$\Rightarrow x < y$

S11. Ans.(d)
Sol.

$? \simeq 8600 \div 420 \times 15$
$\simeq 307$

S12. Ans.(c)
Sol.
$? \simeq 52 - 34 + 22$
$\simeq 40$

S13. Ans.(d)
Sol.
$? \simeq \dfrac{3000 \times 750}{1000} - 1400$
$\simeq 850$

S14. Ans.(a)
Sol.
$? \simeq \dfrac{150}{100} \times 150 + 150$
$\simeq 375$

S15. Ans.(c)
Sol.
$? \simeq \dfrac{990}{34} \times \dfrac{870}{65} \times \dfrac{515}{207}$
$\simeq 970$