Quiz Date: 30th April 2020

Directions (1-5): Solve the given quadratic equations and mark the correct option based on your answer—
(a) x < y
(b) x ≤ y
(c) x = y or no relation can be established between x and y.
(d) x > y
(e) x ≥ y

Q1. I. $2x^2 - 9\sqrt{5}x + 50 = 0$
II. $y^2 - 11\sqrt{3}y + 90 = 0$

Q2. I. $25x^2 - 25x + 6 = 0$
II. $49y^2 - 49y + 12 = 0$

Q3. I. $9x^2 - 18x + 8 = 0$
II. $15y^2 + 4y - 4 = 0$

Q4. I. $\sqrt{25}x+\sqrt{16}y = 41$
II. $\sqrt{16}x-\sqrt{25}y = 40$

Q5. I. $\sqrt{x} - \frac{(18)^{\frac{15}{2}}}{x^2}=0$
II. $\sqrt{y} - \frac{(19)^{\frac{9}{2}}}{y}=0$

Directions (6-10): calculate the approximate value of given questions :

Q6. $\frac{347.89+?}{15.89} + \sqrt[3]{1727.89} + (19.9)^2 = (7.93)^3$
(a) 1252
(b) 1152
(c) 1052
(d) 1464
(e) 1826

Q7. ?% of $(27.8 \times 24.9) + (9.8)^2 = (16.97)^2$
(a) 36
(b) 27
(c) 42
(d) 57
(e) 22

Q8. $\sqrt[3]{?} \times 20.9 + (16.89)^2 + 7.89\%$ of $499.89 = 69.89\%$ of 799.83
(a) 1728
(b) 216
(c) 512
(d) 729
(e) 1331

Q9. 35% 1579 + 29% of 4516 = ? × 41 + 468 + 773.98 – 199.53
(a) 26
(b) 20
(c) 49
(d) 30
(e) None of these

Q10. 49.05 × 19.95 - 24.99 × 14.12 = (36 + ?) × 9
(a) 73
(b) 81
(c) 36
(d) 42
(e) 29

Direction (11 – 15): In the following wrong number series which of the following option will replace the wrong number according to given pattern of series.

Q11. 1152, 1058, 968, 882, 800, 720, 648
(a) None of the given option will replace the wrong number
(b) 1064
(c) 712
(d) 652
(e) 884

Q12. 36, 54, 90, 126, 198, 234, 306
(a) 124
(b) 136
(c) 132
(d) 128

(e) Series is right no need to replace any number

Q13. 2740, 165, 1724, 117, 1004, 77, 508
(a) None of the given option will replace the wrong number
(b) 510
(c) 118
(d) 996
(e) 119

Q14. 4, 47.5, 474.5, 3795.5, 22772.5, 91090.5, 182178.5,
(a) 91089.5
(b) 49.5
(c) 6
(d) 3790.5
(e) Series is right no need to replace any number

Q15. 24, 145, 714, 2855, 8564, 17127, 17126
(a) None of the given option will replace the wrong number
(b) 8566
(c) 17129
(d) 143
(e) 716

Solutions

S1. Ans (a)
Sol.
I. $2x^2 - 9\sqrt{5}x + 50 = 0$
$2x^2 - 4\sqrt{5}x - 5\sqrt{5}x + 50 = 0$
$2x(x - 2\sqrt{5}) - 5\sqrt{5}(x - 2\sqrt{5}) = 0$
$(2x - 5\sqrt{5})(x - 2\sqrt{5}) = 0$
$x = 2\sqrt{5}, \frac{5\sqrt{5}}{2}$
II. $y^2 - 11\sqrt{3}y + 90 = 0$
$y^2 - 5\sqrt{3}y - 6\sqrt{3}y + 90 = 0$
$y(y - 5\sqrt{3}) - 6\sqrt{3}(y - 5\sqrt{3}) = 0$
$(y - 6\sqrt{3})(y - 5\sqrt{3}) = 0$
$y = 6\sqrt{3}, 5\sqrt{3}$
$y > x$

S2. Ans (c)
Sol.
I. $25x^2 - 25x + 6 = 0$
$25x^2 - 10x - 15x + 6 = 0$

$5x(5x-2)-3(5x-2)=0$
$(5x-3)(5x-2)=0$
$x=\frac{3}{5},\frac{2}{5}$
II. $49y^2-49y+12=0$
$49y^2-28y-21y+12=0$
$7y(7y-4)-3(7y-4)=0$
$(7y-3)(7y-4)=0$
$y=\frac{3}{7},\frac{4}{7}$
No relation can be established between x & y.

S3. Ans (d)
Sol.
I. $9x^2-18x+8=0$
$9x^2-6x-12x+8=0$
$3x(3x-2)-4(3x-2)=0$
$(3x-4)(3x-2)=0$
$x=\frac{2}{3},\frac{4}{3}$
II. $15y^2+4y-4=0$
$15y^2+10y-6y-4=0$
$5y(3y+2)-2(3y+2)=0$
$(5y-2)(3y+2)=0$
$y=\frac{2}{5},-\frac{2}{3}$
$x>y$

S4. Ans. (d)
Sol. $5x+4y=41$
$4x-5y=40$
Eq. (i) × 4, eq. (ii) × 5
$20x+16y=164$
$20x-25y=200$
$41y=-36, y=\frac{-36}{41}, x=\frac{365}{41}, x>y$

S5. Ans. (a)
Sol. $x^{\frac{5}{2}} = (18^3)^{\frac{5}{2}}$
$x = 18^3$
$y^{\frac{3}{2}} = (19^3)^{\frac{3}{2}}$
$y = 19^3$
$x < y$

S6. Ans.(a)
Sol.
$\frac{348+?}{16} + \sqrt{1728} + (20)^2 = (8)^3$
$\frac{348+?}{16} + 12 + 400 = 512$
$\frac{348+?}{16} = 100$
? = 1600 – 348
? = 1252

S7. Ans.(b)
Sol.
$\frac{?}{100} \times (28 \times 25) + (10)^2 = (17)^2$
$7 \times ? = 289 - 100$
$? = \frac{189}{7}$
? = 27

S8. Ans.(e)
Sol.
$\sqrt[3]{?} \times 21 + (17)^2 + \frac{8}{100} \times 500 = \frac{70}{100} \times 800$
$\sqrt[3]{?} \times 21 + 289 + 40 = 560$
$\sqrt[3]{?} = \frac{560 - 329}{21}$
$\sqrt[3]{?} = \frac{231}{21}$
$\sqrt[3]{?} = 11 \Rightarrow ? = 1331$

S9. Ans.(b)
Sol.
35% of 1579 + 29% of 4516 =? × 41 + 468 + 773.98 – 199.53
or, ? × 40 + 470 + 770 – 200
$\approx \frac{35 \times 1600}{100} + \frac{30 \times 4500}{100}$
or, $? \times 40 + 1240 - 200$
$\approx 560 + 1350 = 1910$
or ? × 40 + 1040 ≈ 1910
or, ? × 40 ≈ 1910 – 1040 = 870
$\therefore ? \approx \frac{870}{40} = 21.75 \approx 20$

S10. Ans.(c)
Sol.
(36 + ?) × 9 = 49.05 × 19.95 – 24.99 × 14.12
or, 324 + 9 × ? ≈ 50 × 20 – 25 × 14
or, 9 × ? ≈ 1000 – 350 – 324 = 326
∴? ≈ $\frac{326}{9}$ ≈ 36

S11. Ans.(a)
Sol.
Wrong number = 720
Pattern of series

Should be 722 in the place of 720

S12. Ans.(e)
Sol.
Pattern – 18 multiplied by consecutive prime numbers
18 × 2 = 36
18 × 3= 54
18 × 5 = 90
18 × 7 = 126
18 × 11 = 198
18 × 13 = 234
18 × 17 = 306
So, series is right no need to replace only number

S13. Ans.(d)
Sol.
Wrong number = 1004
Pattern of series →
$(14)^3$ - 4 = 2740
$(13)^2$ - 4 = 165
$(12)^3$ - 4 = 1724

$(11)^2 - 4 = 117$
$(10)^3 - 4 = 996$
$(9)^2 - 4 = 77$
$(8)^3 - 4 = 512$
So, should be 996 replace with 1004

S14. Ans.(a)
Sol.
Wrong number = 91090.5
Pattern of series →
4 × 12 – 0.5 = 47.5
47.5 × 10 – 0.5 = 474.5
474.5 × 8 – 0.5 = 3795.5
3795.5 × 6 – 0.5 = 22772.5
22772.5 × 4 – 0.5 = 91089.5
91089.5 × 2 – 0.5 = 182178.5
So, should be 91090.5 replace with 91089.5

S15. Ans.(d)
Sol.
Wrong number = 145
Pattern of series →
24 × 6 – 1 = 143
143 × 5 – 1 = 714
714 × 4 – 1 = 2855
2855 × 3 – 1 = 8564
8564 × 2 – 1 = 17127
17127 × 1 – 1 = 17126
So, should be 145 replace with 143