IX Elite work-13

1) $\frac{3}{\sqrt{8}} + \frac{1}{\sqrt{2}} =$ (a) $\frac{2\sqrt{3}}{3}$ (b) $\frac{5\sqrt{2}}{4}$ (c) $\frac{7\sqrt{2}}{4}$ (d) $\frac{9\sqrt{6}}{5}$

2) $\sqrt{45} - 3\sqrt{20} + 4\sqrt{5} =$ (a) $\sqrt{3}$ (b) $\sqrt{2}$ (c) $\sqrt{5}$ (d) $2\sqrt{5}$

3) $16\sqrt{6} \div 4\sqrt{2} =$ (a) $4\sqrt{3}$ (b) $3\sqrt{3}$ (c) $5\sqrt{3}$ (d) $6\sqrt{3}$

4) $(3\sqrt{2}+5\sqrt{3}) + (\sqrt{2}+\sqrt{3}) =$
(a) $3\sqrt{2}+6\sqrt{3}$ (b) $4\sqrt{2}+6\sqrt{3}$ (c) $3\sqrt{2}-\sqrt{3}$ (d) $5\sqrt{2}+3\sqrt{3}$

5) $2.2\overline{3} - 0.3\overline{21}$ in $\frac{p}{q}$ is :

(a) $\frac{233}{3330}$ (b) $\frac{631}{330}$ (c) $\frac{1297}{3330}$ (d) $\frac{53}{165}$

6) $\frac{p}{q}$ form of $0.000\overline{2} =$ (a) $\frac{1}{4500}$ (b) $\frac{1}{3200}$ (c) $\frac{1}{3600}$ (d) $\frac{1}{9000}$

7) Decimal expansion of $\frac{874}{999}$ is (a) $0.\overline{874}$ (b) $0.8\overline{74}$ (b) $8.7\overline{4}$ (d) $8.\overline{74}$

8) Every point on a number line represents:
(a) a unique real number (b) integers (c) rational numbers
(d) all of these

9) An irrational number between π and 5 is :
(a) 2π (b) $\frac{\pi}{2}$ (c) $\pi+1$ (d) $\pi-1$

10) If $x = 0.232323\ldots$ and $y = 0.22222\ldots$ then $x+y =$
(a) $0.\overline{45}$ (b) 0.45 (c) $0.\overline{43}$ (d) $0.4\overline{5}$

IX Elite work – 13

1) $\frac{3}{\sqrt{8}} + \frac{1}{\sqrt{2}} = \frac{3}{2\sqrt{2}} + \frac{1^{\times 2}}{\sqrt{2}^{\times 2}} = \frac{5}{2\sqrt{2}} = \frac{5\sqrt{2}}{2\times 2} = \frac{5\sqrt{2}}{4}$ (b)

2) $\sqrt{45} - 3\sqrt{20} + 4\sqrt{5}$

$= 3\sqrt{5} - 3\times 2\sqrt{5} + 4\sqrt{5} = 3\sqrt{5} - 6\sqrt{5} + 4\sqrt{5} = \sqrt{5}$ (c)

3) $\frac{16\sqrt{6}}{4\sqrt{2}} = \frac{16\sqrt{2}\times\sqrt{3}}{4\sqrt{2}} = 4\sqrt{3}$ (a)

4) $3\sqrt{2} + 5\sqrt{3} + \sqrt{2} + \sqrt{3} = 4\sqrt{2} + 6\sqrt{3}$ (b)

5) Let $x = 2.2333\ldots$

$10x = 22.3333\ldots$

$100x = 223.3333\ldots$

$90x = 201$

$x = \frac{201}{90}$

Let $y = 0.3212121\ldots$

$10y = 3.212121\ldots$

$1000y = 321.212121\ldots$

$990y = 318$

$y = \frac{318}{990}$

$\therefore x - y = \frac{201^{\times 11}}{90^{\times 11}} - \frac{318}{990} = \frac{2211}{990} - \frac{318}{990} = \frac{1893}{990}$

$= \frac{631}{330}$ (b)

6) Let $x = 0.000222\ldots$

$1000x = 0.2222\ldots$

$10000x = 2.222\ldots$

$9000x = 2$

$x = \frac{2}{9000} = \frac{1}{4500}$ (a)

7) $0.\overline{874}$ (a)

8) all of these (d)

9) $\pi + 1$ (c)

10) $x + y = 0.232323\ldots$

$0.222222\ldots$

$0.454545\ldots = 0.\overline{45}$ (a)