

Revision Worksheet

Date: 02/09/25

class - IX

Chapters: Number System, Polynomials

M.C.Q.

- 1) The sum of the numbers $0.\overline{15} + 0.\overline{7} + 1.\overline{35}$ is -
(a) $\frac{157}{9}$ (b) $\frac{157}{99}$ (c) $\frac{226}{99}$ (d) $\frac{262}{999}$
- 2) Which of the following is true?
(a) $\sqrt{a} \times \sqrt{b} = ab$ (b) $\sqrt{a+b} \times \sqrt{a-b} = (a^2 - b^2)$
(c) $\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$ (d) $(a+\sqrt{b})(a-\sqrt{b}) = (a-b)$
- 3) The value of $\frac{(625)^{0.25} \times (-8)^{0.38}}{\left(\frac{25}{9}\right)^{+1/2}}$ is -
(a) 5 (b) 10 (c) 6 (d) -6
- 4) The rationalization factor of $\frac{1}{\sqrt{5} + \sqrt{2}}$ is -
(a) $\sqrt{5} - \sqrt{2}$ (b) $\sqrt{2} + \sqrt{5}$ (c) $\frac{1}{\sqrt{5} - 2}$ (d) $\frac{1}{\sqrt{5} + \sqrt{2}}$
- 5) If $x = 7 + 4\sqrt{3}$, then $\left(\sqrt{x} + \frac{1}{\sqrt{x}}\right)$ is $\rightarrow$
(a) 14 (b) $8\sqrt{3}$ (c) 4 (d) $2\sqrt{3}$
- 6) The length of the period of the repeating digits in $\frac{1}{7}$ is -
(a) 5 (b) 6 (c) 4 (d) 3

<7> The degree of the polynomial

$$p(x) = x^5 + \frac{1}{x^5} \text{ is } \underline{\hspace{1cm}}$$

- (a) 5 (b) -5 (c) 0 (d) it is not a polynomial.

<8> Which of the following is a monomial?

- (a) $x+5$ (b) $5x^2-7x+2$ (c) x^{15}

(d) $a^2+b^2+c^2-3abc$

<9> If $p(x) = x^2 - 3\sqrt{2}x + 9$, then the value of $p(3\sqrt{2})$ is —

- (a) 9 (b) 0 (c) 18 (d) -9

<10> If $(x-2)$ is a factor of the polynomial $p(x) = \cancel{ax^2-5x-2}$ ax^2-5x-2 then the value of a is —

- (a) 1 (b) 3 (c) -1 (d) 4

<11> If $\frac{a}{b} + \frac{b}{a} = -1$, then $(a^3-b^3) = ?$

- (a) -3 (b) -2 (c) -1 (d) 0

<12> $(4x^2+4x-3) = ?$

(a) $(2x-1)(2x-3)$

(c) $(2x+2)(2x-1)$

(b) $(2x+1)(2x-3)$

(d) $(2x-3) \times 2x$

Q VSAQ

(i) Express $-32.12\overline{35}$ in the form $\frac{p}{q}$, where p & q are integers.

(ii) Simplify:

(a) $3\sqrt{45} - \sqrt{125} + \sqrt{200} - \sqrt{50}$

(b)
$$\frac{(25)^{5/2} \times (729)^{1/2}}{(125)^{2/3} \times (27)^{2/3} \times 8^{4/3}}$$

(c)
$$\frac{1}{\sqrt{3}-\sqrt{2}} + \frac{3}{\sqrt{5}-\sqrt{2}} - \frac{2}{\sqrt{5}-\sqrt{3}}$$

(iii) Find two irrational numbers between $\frac{1}{7}$ and $\frac{2}{7}$.

(iv) Factorize:

(a) $108a^2 - 3(b-c)^2$

(c) $x - 8xy^3$

(b) $x^2 + 2\sqrt{3}x - 24$

(v) Find the value of a for which $(x-4)$ is a factor of $(2x^3 - 3x^2 - 18x + a)$.

Q SAQ

(i) Find the product:

$$(x-y-z)(x^2+y^2+z^2+xy-yz+xz)$$

(ii) If $x = 2 + \sqrt{3}$, find $x^4 + \frac{1}{x^4}$.

(iii) If $\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}} = a + b\sqrt{6}$, find a & b .

④ If the polynomials $(2x^3 + x^2 - ax + 2)$ and $(2x^3 - 3x^2 - 3x + a)$ when divided by $(x-2)$ leave same remainder, find the value of a .

⑤ Prove that $\rightarrow$

$$\frac{0.85 \times 0.85 \times 0.85 + 0.15 \times 0.15 \times 0.15}{0.85 \times 0.85 - 0.85 \times 0.15 + 0.15 \times 0.15} = 1$$
