

HOME WORK SUMMER VACATION

CLASS: IX

Q1 Complete the following :

(I) Every point on the number line corresponds to a _____ number, which may be either _____ or _____

(II) **0** is a _____ number

(III) _____ rational numbers and irrational numbers can be inserted between 1 and 2

Q2

State whether the following statements are true or false give reasons for your answers.

(i) Every natural no. is whole number.

(ii) Every integer is a whole number.

(iii) Every rational number is a whole number.

(iv) Every irrational number is a real number.

(v) Every real number is an irrational number.

(vi) Every point on the number line is of the form \sqrt{m} where m is a natural no's.

Q3 Q12 Express the following in p/q form:

1) $0.\bar{5}$, 2) $0.\overline{34}$, 3) $0.\overline{001}$, 4) $0.12\bar{3}$

Q4 Represent $\sqrt{5}$ on the number line

Q5 Simplify the following

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

(2) $(3 + \sqrt{3})(2 + \sqrt{2})$

(3) $(3 + \sqrt{5})(3 - \sqrt{5})$

(4) $3^{\frac{3}{5}} \cdot 3^{\frac{1}{5}}$

(5) $7^{\frac{1}{5}} \cdot 7^{\frac{4}{5}}$

Q6 (I) If $\frac{1}{3+\sqrt{3}} = a + b\sqrt{3}$, find the value of a and b.

(II) If $\frac{5}{\sqrt{5}-\sqrt{3}} = a\sqrt{5} + b\sqrt{3}$, find the value of a and b

(III) if $\frac{7+3\sqrt{5}}{7-3\sqrt{5}} = a+b\sqrt{5}$, find the value of a and b

Q7 Factorise :

(i) $3x^2 + 7x + 2$ (ii) $x^2 + 3\sqrt{3}x + 6$ (iii) $x^3 - 23x^2 + 142x - 120$

Q8 Expand: (i) $(x + 3y + 6z)^2$ (ii) $(-x + 2y - 3z)^2$

Q9 If $x + \frac{1}{x} = 5$, evaluate the following

(i) $x^2 + \frac{1}{x^2}$ (ii) $x^4 + \frac{1}{x^4}$

Q10 Make 15 to 20 slides on power point on the life history of any two mathematicians.