INTERNATIONAL INDIAN SCHOOL

BURAIDAH

Worksheet For The Academic Year 2024-25

CLASS: IX SUBJECT: Mathematics DATE: 23/04/2024

LESSON-1 Number System

1) Is 5 a rational number? Why?

2) Write examples of 2 irrational numbers.

3) Represent 8.5467 as a rational number in the form p/q.

4) Represent $\sqrt{3}$ and $\sqrt{5}$ on different number lines.

5) Check which of the following are rational numbers.

$\sqrt{7}$, $\sqrt{81}$, $\sqrt{\frac{4}{9}}$, $\sqrt{512}$

6) Express 1.4646…. in the form p/q.

7) Express $\frac{13}{8}$ in the decimal form and write the type of decimal expansion obtained.

8) Write three irrational numbers between 0.605 and 0.609.

9) Simplify:

a) $\frac{\sqrt{36}}{\sqrt{4}}$ b) $\sqrt{10} \times \sqrt{15}$ c) $(\sqrt{7} + \sqrt{5})(\sqrt{7} - \sqrt{5})$ d) $2\sqrt{3} + \sqrt{3}$

e) $\frac{27\sqrt{15}}{9\sqrt{3}}$

10) Rationalize:

a) $\frac{1}{\sqrt{17} - 4}$ b) $\frac{3\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}}$ c) $\frac{3}{2\sqrt{3}}$ d) $\frac{\sqrt{3} + \sqrt{2}}{5 + \sqrt{2}}$

11) Find a and b , if $\frac{5 + 2\sqrt{3}}{7 + 4\sqrt{3}} = a - b\sqrt{3}$.

12) Write one rational number between $\frac{2}{5}$ and $\frac{3}{5}$.

13) Write two irrational numbers between $\frac{2}{5}$ and $\frac{3}{5}$.

14) Find the value of $\frac{1}{\sqrt{3}+1}$ if $\sqrt{3}$ = 1.732

15) Simplify:

a) $2^{\frac{2}{3}} \times 2^{\frac{1}{3}}$ b) $(3^{\frac{1}{5}})^3$ c) $13^{\frac{1}{5}} . 17^{\frac{1}{5}}$

16) Find the value of:

a) $\frac{11^0 + 7^0}{4^0}$ b) $(36)^{\frac{-1}{6}} \times (36)^{\frac{1}{6}}$

17) A collection of rational and irrational numbers form _____ numbers.

18) Decimal expansion of irrational numbers are _____.

19) Decimal expansion of rational numbers are _____ or _____.

20) π is an _____ number.

ANSWERS

3) $\frac{85467}{10000}$

5) $\sqrt{7}$ and $\sqrt{512}$

6) $\frac{145}{99}$

7) 1.625 (terminating)

9) a) 3 b) $5\sqrt{6}$ c) 2 d) $3\sqrt{3}$ e) $3\sqrt{5}$

11) a = 11 and b =6

14) 0.366

15) a) 2 b) $3^{\frac{3}{5}}$ c) $221^{\frac{1}{5}}$ 16) a) 2 b) 1