NUMBER SYSTEM

GRADE : IX **WORKSHEET – 1** **SUBJECT : MATHEMATICS**

I. Multiple Choice questions:

1) Every rational number is _____
a) Whole number b) Natural number c)Integer d) Real number

2) Which of the following is true ?
a) Every irrational number is a real number
b) Every real number is an Irrational number
c) Every real number is a rational number
d)Every point on the number line is of the form $\sqrt{m}$, where m is a natural number

3)The number whose decimal expansion is non-terminating and non-recurring is an _____
a) Rational number b) Irrational number c) Whole number d) Composite number

4) Find the odd one out of the following:
a) $\sqrt{32}$ x $\sqrt{2}$ b) $\frac{\sqrt{27}}{\sqrt{3}}$ c) $\sqrt{72}$ x $\sqrt{8}$ d) $\frac{\sqrt{54}}{\sqrt{18}}$

5)The value of $\sqrt[4]{\sqrt[3]{2^2}}$ is equal to _____
a) $2^{-1/6}$ b) 2^{-6} c) $2^{1/6}$ b) 2^{6}

6)Which of the following statement is false ?
a)The square root of -25 is 5 b) $\sqrt{25}$ = 5 c) $-\sqrt{25}$ = − 5 d) $\sqrt{25}$ = ± 5

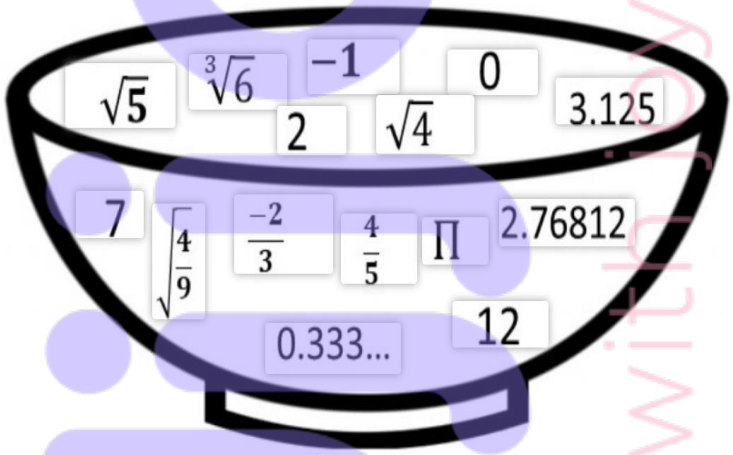
7)The smallest rational number by which 1/3 should be multiplied so that its decimal expansion terminates with one place of decimal is _____
a) $\frac{1}{10}$ b) $\frac{3}{10}$ c) 3 d) 30

8) If $8^x = \frac{64}{2^x}$, then the value of x is _____
a) 3 b) 1 c) $\frac{1}{2}$ d) $\frac{3}{2}$

9) $(0.001)^{1/3}$ is equal to _____
a) 0.1 b) 0.001 c) 0.01 d) 0.0001

10) If a = 2 and b = 3 then the value of b^a is _____
a) 4 b) 9 c) 2 d) 3

II. From the bowl of numbers, Pick a number and categorize them as rational or irrational :



Rational Numbers	Irrational Numbers

III. Fill in the Blanks:

1)The rational number equal to its negative is its _____

2) If x is the reciprocal of y, then the reciprocal of y is _____

3)The value of $2^{55} \; X \; 2^{60} - 2^{97} \; X \; 2^{18}$ is _____

4) If $\{(2)^{3m-1} + 10\} \div 7 = 6$, then m = _____

5) The Value of $256^{0.16} \; X \; 256^{0.09}$ is _____

6)The simplest rationalising factor of $\sqrt[3]{500}$ is _____

7) If $x = 7 + 4\sqrt{3}$ and xy = 1 then $\frac{1}{x^2} + \frac{1}{y^2}$ = _____

8) If $x = \sqrt[3]{2 + \sqrt{3}}$, then $x^3 + \frac{1}{x^3}$ = _____

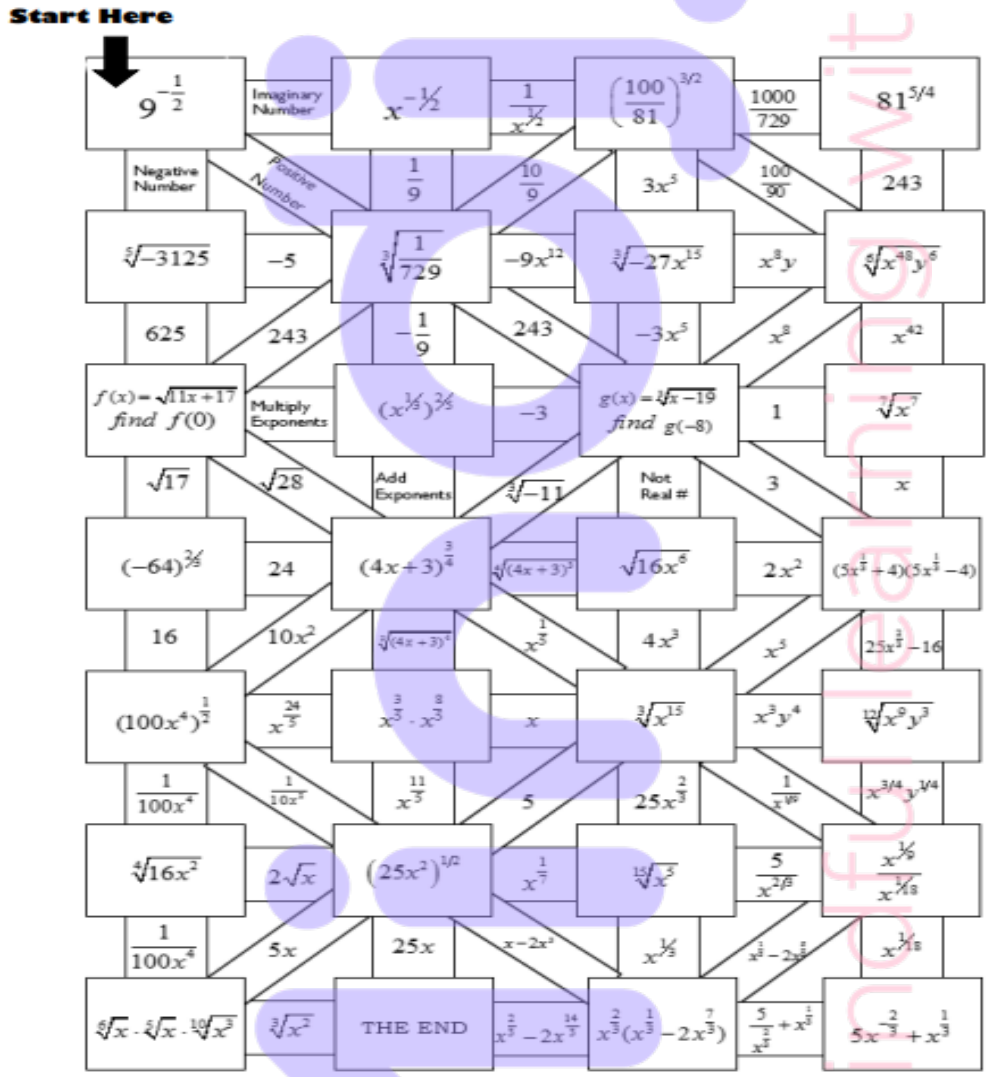
9)The value of $\frac{\sqrt{48}+\sqrt{32}}{\sqrt{27}+\sqrt{18}}$ is _____

10) If $\sqrt{2} = 1.4142$, then $\sqrt{\frac{\sqrt{2}-1}{\sqrt{2}+1}}$ =_____

IV. State whether the following statements are true or false:

1. $\frac{2}{\sqrt{5}}$ is a rational number
2. There are infinitely many integers between any two integers
3. Every integer is a rational number.
4. 0.33033003300033... is an Irrational number
5. The value of m for which $\{\frac{6}{13}\}^{-4} \times \{\frac{6}{13}\}^{3m} = \{\frac{6}{13}\}^{5}$ is -3

V. Answer each question. Use your answer to navigate through the maze:



VI. Complete the Cross-word Puzzle using the clues given:

Across :

3. Rational numbers have only two choices either they are terminating or non-terminating and _____ decimal
6. The first person to discover the numbers which were not rational
7. The number $(\sqrt{3}+1)(\sqrt{3}-1)$ is

8. Counting numbers are called

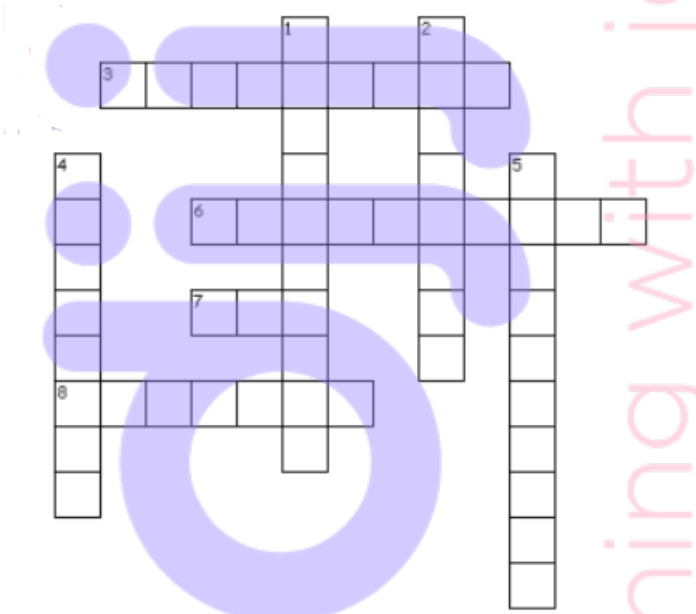
Down:

1.Non-terminating , non-recurring decimal expression

2.The set of positive and negative number is

4.Number of the form p/q

5.Who was the first to compute digits in the decimal expansion of π (Greek genius)



VII Match the Exponent in Column I to an exponent in Column II

COLUMN I	COLUMN II
4^3	1,000,000
$(-2)^5$	0.0001
10^6	0.04
3^0	-243
$(-0.1)^4$	64
$(\frac{1}{5})^3$	400
7^3	1
20^2	-32
$(0.2)^2$	343
-3^5	$\frac{1}{125}$