

# DELHI PUBLIC SCHOOL, GAYA

## WORKSHEET-1

**Subject : Mathematics**

**Class : IX**

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**Choose the correct option :**

1. Which of the following has non-terminating non-repeating decimal expansion?  
a.  $\frac{1}{\sqrt{2}}$                       b.  $\frac{13}{7}$                       c.  $\frac{15}{16}$                       d.  $\sqrt{6.25}$
2. If  $x + \frac{1}{x} = \sqrt{6}$ , then  $x^2 + \frac{1}{x^2} = \dots\dots\dots$ ?  
a. 6                      b. 4                      c. 34                      d. 8
3. Which of the following is irrational?  
a. 2.3232...                      b. 0.3796                      c. 1.010010001 ...                      d. none of these
4. A rational number can be  $\rightarrow$   
a. None – terminating repeating                      b. Non – terminating non – repeating  
c. Natural number                      d. choice (a) and (c)
5. Which of the following is a natural number:  
a.  $2^0$                       b.  $0^0$                       c. 17                      d. Option (a) and (d)

**Fill in the blanks :**

6. Every point on the number line is of the form  $\sqrt{m}$ , where  $m \in \mathbb{N}$ . [T / F]
7. Every irrational number is a real number. [T / F]
8. Zero is a rational number. [T / F]
9. Every rational number is a whole number. [T / F]
10. Every integer is a natural number. [T / F]

**Short Questions :**

11. Simplify by rationalizing denominator :  $3\sqrt{5} - \sqrt{5} + \sqrt{180}$
12. Insert 3 rational numbers between  $\frac{2}{3}$  and  $\frac{3}{4}$ .
13. Check if the following are rational / irrational  
a.  $\frac{3\sqrt{8}}{\sqrt{2}}$                       b.  $(\sqrt{2} + \frac{1}{2})^2$

14. Write 0.675 into  $\frac{p}{q}$  form.

15. Evaluate :

a.  $(64)^{\frac{1}{2}}$       b.  $(32)^{\frac{1}{5}}$

**Long Questions :**

16. Find 'a' and 'b' if:

$$\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a + b\sqrt{3}$$

17. Visualise  $\sqrt{3}$  on number line.

18. if  $x = 2 + \sqrt{5}$  find  $x^2 + \frac{1}{x^2}$

19. Visualise 2.665 on the real line.

20. If  $\sqrt{3} = 1.732$ , find  $\frac{1+2\sqrt{3}}{2-\sqrt{3}}$

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