



Chanakya Global School

Assandh Road, Alewa (Jind) – 126111

Worksheet for Summer Vacation

NUMBER SYSTEM - IX

1. Represent $\sqrt{3.5}$ on the number line

2. If $x = 3 + 2\sqrt{2}$, find the value of $x^2 + 1/x^2$ (34)

3. If $x = 2 + \sqrt{5}$, Prove that $x^2 + \frac{1}{x^2} = 18$

4. Express $1.\overline{32} + 0.35$ as a fraction in simplest form. (166/99)

5. Rationalise the denominator

$$\frac{1}{\sqrt{6} + \sqrt{5} - \sqrt{11}}$$

6. If $a = 9 - 4\sqrt{5}$, find the value of $\left[a - \frac{1}{a}\right]^2$ (320)

7. If $x = 1 - \sqrt{2}$, find the value of $\left[x - \frac{1}{x}\right]^3$ (8)

8. If $x = 3 + 2\sqrt{2}$, find the value of $\left[\sqrt{x} - \frac{1}{\sqrt{x}}\right]$ (8)

9. If $x = 0.125$, find the value of $(1/x)^{1/3}$

10. If $x = \frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$ then find the value of x^2 (49 + 20√6)

11. If $x = \frac{1}{2 - \sqrt{3}}$, find the value of $x^3 - 2x^2 - 7x + 5$ (3)

12. Find four rational numbers between: $3/5$ and $4/5$

13. Find two irrational numbers lying between $\sqrt{2}$ and $\sqrt{3}$

14. Find two rational and irrational numbers between 0.3101 and 0.3222

15. Simplify the following: a) $\left(\frac{576}{625}\right)^{-1/2}$ b) $\left(\frac{343}{1000}\right)^{-1/3}$ c) $(-1/27)^{-2/3}$ d) $(0.008)^{4/3}$ e) $(729)^{-1/6}$

16. Simplify and express the result in the simplest form: $\frac{(25)^{3/2} \times (243)^{2/5}}{(16)^{5/4} \times (8)^{4/3}}$ (1125/512)

17. Find the value x, if $5^{x-3} \times 3^{2x-8} = 225$

18. Solve: a) $49 \times 7^x = (343)^{1/3}$ (x = 5)

b) $2^x = (128)^{1/7} \times (\sqrt{2})^4$ (x = -1)

c) If $3^x = 9$, find x (3)

d) $(1/7)^{4-2x} = \sqrt{7}$ (1/2)

19. Evaluate: a) $125^{-1/3} \times 27^{1/3} (6^2 + 8^2)^{1/2}$ (9/4)

b) $(17^2 - 8^2)^{1/2}$ (6)

c) $64^{1/3} (64^{1/3} - 64^{2/3})$ (15)

20. Simplify: a) $\sqrt{45} + \sqrt{80} - 3\sqrt{20}$ (√5)

b) $7\sqrt{6} - \sqrt{252} - \sqrt{294} + 6\sqrt{7}$ (0)

c) $4\sqrt{28} + 3\sqrt{7}$

21. Give an example of two irrational numbers whose: (A) Sum is rational (B) product is rational (C) quotient is rational



Chanakya Global School

Assandh Road, Alewa (Jind) – 126111

Worksheet for Summer Vacation

PROBABILITY - IX

1. Three coins are tossed once, find the probability of getting at least one head (7/8)

2. Three coins are tossed simultaneously 200 times with the following frequencies of different Outcomes:

Out comes	3 Heads	2 Heads	1 Head	No head
Frequency	23	72	77	28

Find the probability of getting: a) 2 Heads

(9/25)

b) at least 2 Heads

(19/40)

3. A dice is thrown once, find the probability of getting a prime number (1/2)

4. A dice is thrown once. Find the probability of getting:

a) An even number (1/2)

b) A prime number (1/2)

c) A number greater than 4 (1/3)

5. A fair die is tossed once. Find the probability of getting:

a) a number more than or equal to 3 (2/3)

b) a multiple of 3 (1/3)

6. A letter of English alphabet is chosen at random. Calculate the probability that the letter chosen is a vowel (5/26)

7. A bag contains 15 balls numbered 1 to 15. Find the probability of drawing a prime number, When one ball is drawn from the bag at random (2/5)

8. Marks obtained by 50 students in a class test of 100 marks are given below :

Marks	0 - 25	25 - 50	50 - 75	75 - 100
No of students	4	12	18	16

Find the probability that a student obtained less than 50% marks (8/25)

9. In a one day international cricket match, a batsman played 40 balls. The runs scored as follows

Runs scored	0	1	2	3	4	6
No of balls	13	15	5	1	4	2

10. Find the probability that the batsmen will score :

a) 6 runs (1/20)

b) A four or a six run (3/20)

11. One number is chosen at random from numbers 1 to 100. Find the probability that it is divisible by 4 or 6 (33/100)

12. In a survey of 80 people, 60 people like apple juice and remaining dislike it. Find the Probability that people dislike apple juice (1/4)

13. Probability of an impossible event is always..... a) 0 b) 1 c) 2 d) 1/2

14. A die is thrown once. The probability of getting an even prime number is a) 1/2 b) 1/3 c) 1/6 d) 2/3

15. A coin is tossed once then probability of getting head is a) 2 b) 1 c) 1/2 d) 3