

**MATHEMATICS
CLASS-IX****Previous Knowledge and Chapter-1(Number Systems)**

1.
 - Find four rational numbers between $\frac{2}{3}$ & $\frac{3}{4}$
 - Find three rational numbers between $\frac{3}{4}$ and $\frac{4}{5}$
2. Express in $\frac{p}{q}$ form $2.\bar{3}$, $3.\bar{45}$, $4.\overline{567}$, $2.3\bar{4}$, $3.45\bar{6}$, $4.5\overline{67}$
3. Represent $\sqrt{3}$, $\sqrt{5}$, $\sqrt{13}$ on number line.
4. Simplify by rationalizing denominator $\frac{7+3\sqrt{5}}{7-3\sqrt{5}}$.
5. Find a & b if $\frac{\sqrt{3}-1}{\sqrt{3}+1} = a + b\sqrt{3}$
6. Evaluate:
(i) $\sqrt[3]{125}$ (ii) $\sqrt[4]{1250}$
7. Evaluate $(102)^2$ & $(999)^2$ by using suitable identity.
8. Divide $f(x)$ by $g(x)$ & verify the value of remainder by remainder theorem also. Given that $f(x) = x^3 + 4x^2 - 3x - 10$, $g(x) = x + 4$
9. Using suitable identity evaluate 104×96 .
10. Find the value of K, if $x - 2$ is factor of $4x^3 + 3x^2 - 4x + K$
11. Locate the following geometrically on the number line: $\sqrt{3.5}$, $\sqrt{4.8}$
12. Find value of $\frac{1}{\sqrt{1}+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}} + \dots + \frac{1}{\sqrt{8}+\sqrt{9}}$
13. Find the answers in simplest form /mixed fractions :-
i) $\frac{5}{12} + \frac{7}{18}$ ii) $\frac{6}{8} \times \frac{12}{15}$ iii) $\frac{5}{36} - \frac{7}{54}$ iv) $\frac{12}{16} \div \frac{30}{24}$
14. Using suitable identities expand the following :-
i) $(2x-3y)^2$ ii) $(3x+4y)(3x-4y)$
15. Using suitable identities evaluate the following :-
i) 101^2 ii) 98^2 iii) 1.03×9.7 iv) $(1.02)^2 - (0.98)^2$

16. Complete the following formula table :-

Sl.	Name of the solid	LSA/CSA	TSA	Volume
1	Cube			
2	Cuboid			
3	Cylinder			
4	Cone			
5	Sphere			
6	Hemisphere			
7	Hollow Cylinder			

17. Using laws of exponents simplify : $(12^3 \times 9^3 \times 4) / (6^2 \times 8^3 \times 27)$

18. Simplify and express the result in power notation with positive exponent.

i) $(-3)^4 \times \left(\frac{5}{3}\right)^4$

ii) $(3^{-7} \div 3^{-10}) \times 3^{-5}$

19. Simplify using laws of exponent : $(6^3 \times 15^2) \div 10^2$

20. Find m, if $4^m = 8$
