

CLASS 9

REVISION SHEET

MATHEMATICS

2018-19

Real Numbers

1. Find three rational numbers lying between $\frac{2}{5}$ and $\frac{3}{4}$.
2. Express each of the following decimals as fraction in simplest form
 - i. $0.\bar{6}$
 - ii. $0.24\bar{5}$
3. Represent the following numbers on the number line :
 - i. $\sqrt{8}$
 - ii. $\sqrt{6.4}$
4. If a and b are rational numbers and $\frac{4+3\sqrt{5}}{4-3\sqrt{5}} = a + b\sqrt{5}$, find the values of a and b .
5. If $x = 2 + \sqrt{3}$, find the value of $(x^2 + \frac{1}{x^2})$.
6. Simplify : $(\frac{81}{16})^{-\frac{3}{4}} \times \{ (\frac{25}{9})^{-\frac{3}{2}} + (\frac{5}{2})^{-3} \} = 1$
7. Write down the density property of real numbers
8. Simplify : $(\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}} + \frac{\sqrt{3} - \sqrt{2}}{\sqrt{3} + \sqrt{2}})$
9. Give an example of a number x such that x^2 is an irrational number and x^4 is a rational number.
10. If $\frac{6}{(2\sqrt{2} - 2\sqrt{3})} = (a\sqrt{2} + b\sqrt{3})$, find the values of a and b .
11. Prove that : $\frac{(0.6)^0 - (0.1)^{-1}}{(\frac{3}{8})^{-1} (\frac{3}{2})^3 + (-\frac{1}{3})^{-1}} = -\frac{3}{2}$.
12. If $3^{x-1} = 9$ and $4^{y+2} = 64$, then find the value of $\frac{x}{y}$.
13. Simplify : $\frac{5^{n+2} - 6 \times 5^{n+1}}{13 \times 5^n - 2 \times 5^{n+1}}$
14. If $\frac{9^n \times 3^2 \times (3^{\frac{n}{2}})^{-2} - (27)^n}{3^{3m} \times 2^3} = \frac{1}{27}$, prove that $m - n = 1$
15. Find the value of : $\frac{(x^a + b)^2 (x^b + c)^2 (x^c + a)^2}{(x^a x^b x^c)^4}$.

Topic – Polynomials
Class-IX

Factorize the following(1-8):-

1. $a^3 - 7a + 6$

2. $12 + 4x - 3x^2 - x^3$

3. $p^3 + 6p^2 + 12p + 7$

4. $x^2 - y^2 - 6ax + 2ay + 8a^2$

5. $x^7 + x^4 - 16x^3 - 16$

6. $(2y - x)^3 + (2x - y)^3 - (x+y)^3$

7. $7(x-2y)^2 - 25(x-2y) + 12$

8. $a^3 + 3a^2b + 3ab^2 + b^3 - 8$

9. $x/y + y/x = 1$, find the value of $x^3 + y^3$

10. If $x + 1/x = 2$, find the value of $x^3 + 1/x^3$

11. If $x = 2y + 6$, Find the value of $x^3 - 8y^3 - 36xy - 216$

12. Without actually calculating the cube find the value of the following:

$$(-12)^3 + (7)^3 + (5)^3$$

13. If $(x^3 + ax^2 + bx + 6)$ has a factor $(x - 2)$ and leaves a remainder 3 when divided by $(x - 3)$, Find the values of a and b .

14. Find the values of a for which $(x + a)$ is a factor of the polynomial $f(x) = x^3 + ax^2 - 2x + a + 6$.

15. If $p = 2 - a$, prove that $a^3 + 6ap + p^3 - 8 = 0$.

