



**INDIAN SCHOOL DARSAIT**  
**DEPARTMENT OF MATHEMATICS**



Subject : Mathematics      Topic : Polynomials      Date of Worksheet : 14-5-2018

Worksheet No:2

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Date : \_\_\_\_\_

Name of the Student : \_\_\_\_\_ Class & Division : IX ... Roll Number : \_\_\_

<b><u>Section A (Basic Skill)</u></b>		<b>Marks</b>
<b><u>Simplify</u></b>		
1.	Find $\frac{2}{3}$ of 72.	
2.	Find $\frac{1}{4}$ of $9\frac{1}{6}$ .	
3.	Find: $\frac{4}{5} \times 3\frac{1}{7}$	
4.	Find $\frac{16}{17} \times \frac{34}{32}$	
5.	Find which is greater: $\frac{1}{5}$ of $\frac{3}{4}$ or $\frac{1}{8}$ of $\frac{7}{5}$	
<b><u>Section B</u></b>		
1.	Find the remainder when $x^3 + x^2 + x + 1$ is divided by $x - \frac{1}{2}$ , using remainder theorem.	2
2.	If x and y are two positive real numbers such that $x^2 + 4y^2 = 17$ and $xy = 2$ , then find the value of $(x + 2y)$ .	2
3.	Polynomial $3x^3 - 5x^2 + kx - 2$ and $-x^3 - x^2 + 7x + k$ leave the same remainder when divided by $(x + 2)$ . Find the value of k.	3
4.	Factorise : $9x^2 + y^2 + z^2 - 6xy + 2yz - 6xz$ . Hence find its value when $x= 1, y=2$ and $z = -1$ .	3
5.	Find the value of $ab + bc + ca$ , if $a+ b+ c = 9$ and $a^2 + b^2 + c^2 = 35$ .	3
6.	Find the value of 'a' for which $(x-a)$ is a factor of the polynomial $x^6 - ax^5 + x^4 - ax^3 + 3x - a + 2$ .	3
7.	Factorise completely: $x^3 - 3x^2 - 9x - 5$ .	4
8.	Simplify : $(a + 2b - 3c)^2 - (a - 2b - 3c)^2 - 6b^2 - 9bc$ .	4
9.	Find the value of $p^3 - q^3$ , if $p - q = \frac{10}{9}$ and $pq = \frac{5}{3}$ .	4



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10.	Evaluate using identities: (i) $103 \times 107$ (ii) $(102)^3$	4
11.	If $x + \frac{1}{x} = 3$ , then find $x^3 + \frac{1}{x^3}$	3
12.	The polynomial $ax^3 + 3x^2 - 3$ and $2x^3 - 5x + a$ when divided by $(x - 4)$ leaves the remainders $M$ and $N$ respectively. Find the value of $a$ if $M + N = 0$ .	4
<b><u>Section C</u></b>		
1.	If $\left(\frac{8}{15}\right)^3 - \left(\frac{1}{3}\right)^3 - \left(\frac{1}{5}\right)^3 = \frac{x}{75}$ , find $x$ .	3
2.	Simplify: $\left(x - \frac{1}{x}\right)\left(x + \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2}\right)\left(x^4 + \frac{1}{x^4}\right)$	3
3.	Simplify: $\frac{27 \times 27 \times 27 - 7 \times 7 \times 7}{27 \times 27 + 27 \times 7 + 7 \times 7}$	4
4.	Factorise completely $x^8 - y^8$	4
5.	If $a - b = 7$ and $a^2 + b^2 = 85$ , find $a^3 - b^3$ .	4