



INDIAN SCHOOL DARSAIT

DEPARTMENT OF MATHEMATICS



Subject : Mathematics Topic : Polynomials Date of Worksheet : 24-5-2017

Worksheet No:3

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Date : _____

Name of the Student : _____

Class & Div : IX

Roll Number : ____

<u>Section A (Basic Skill)</u>		Marks
<u>Simplify</u>		
1.	Find $\frac{2}{3}$ of 72.	1
2.	Find $\frac{1}{4}$ of $9\frac{1}{6}$.	1
3.	Find: $\frac{4}{5} \times 3\frac{1}{7}$	1
4.	Find $\frac{1}{1} \times \frac{3}{3}$	1
5.	Find which is greater: $\frac{1}{5}$ of $\frac{3}{4}$ or $\frac{1}{8}$ of $\frac{7}{5}$	1
<u>Section B</u>		
Answer the following questions:		
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



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9.	Find the value of $p^3 - q^3$, if $p - q = \frac{1}{9}$ and $pq = \frac{5}{3}$.	4
10.	Evaluate using identities: (i) 103×107 (ii) $(102)^3$	4
<u>Section C – HOT Questions</u>		
1.	If $\left(\frac{8}{1}\right)^3 - \left(\frac{1}{3}\right)^3 - \left(\frac{1}{5}\right)^3 = \frac{x}{7}$, find x.	3
2.	If $x + \frac{1}{x} = 3$, then find $x^3 + \frac{1}{x^3}$	3
3.	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
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
6.	If both $(x - 2)$ and $(x - \frac{1}{2})$ are factors of polynomial $px^2 + 5x + r$, show that $\frac{p}{r} = 1$	4
7.	Simplify: $(1 - \frac{1}{x+1})(1 - \frac{1}{x+2})(1 - \frac{1}{x+3}) \dots \dots \dots (1 - \frac{1}{x+1})$	4
8.	Factorize $a^7 - ab^6$	4
9.	Factorize $(x + y)^3 - (x - y)^3$	3
10.	If $ax^3 + bx^2 + x - 6$ has $(x + 2)$ as a factor and leaves remainder 4 when divided by $(x - 2)$. Find the values of a and b.	4