



NAME OF THE STUDENT :

CLASS : 8 SEC :

SUB: MATHEMATICS



WORKSHEET NO.01

TOPIC : ALGEBRAIC EXPRESSIONS & FACTORISATION

DATE: 14 .10.18

S.NO	ANSWER THE FOLLOWING QUESTIONS
1	Expand the following using suitable identities. a) $(x + 11)(x + 11)$ b) $(k - 4)^2$ c) $(x + 1)(x + 4)$ d) $(0.9p - 0.5q)^2$ e) $(3x^2 - 7)(3x^2 - 8)$ f) $(-8z + y)(-8z - y)$ g) $(3x + 4y)^2$ h) $(3p + 4)(3p - 5)$ i) $(x^2y^2 + 7)(7 - x^2y^2)$ j) $\left(abc - \frac{3x}{4}\right)^2$
2	Using suitable identities ,evaluate the following: a) 98^2 b) 106^2 c) $(9.9)^2$ d) $(9.7)^2 - (0.3)^2$ e) 506×494 f) 203×193
3	Simplify : $(5x - 4y)^2 - (5x + 4y)^2$
4	Simplify using suitable identity $(4p - 1)(4p + 1)(16p^2 + 1)$ and evaluate for $p = -1$
5	Find $x^2 + y^2$, if $(x + y) = 14$ and $xy = 48$
6	Show that $(4x - 9)^2 + 144x = (4x + 9)^2$
7	The base of a parallelogram is $(2x + 3)$ units and its corresponding height is $(2x - 3)$ units. Find the area of the parallelogram. What will be the area if $x = 30$ units?
8	Simplify using identity $(x + y)(x - y) + (y + z)(y - z) + (z + x)(z - x)$.
9	If $x + \frac{1}{x} = 9$, find $x^2 + \frac{1}{x^2}$
10	If $x - \frac{1}{x} = 5$, find $x^2 + \frac{1}{x^2}$
11	Find the HCF: i) $3m, 6n$ ii) $9xy^2, -6xy, -12x^2y$ iii) $24a^2b, -16abc, 32a^2b^2c^3$ iv) $38a^3x^5, 57a^4x^3$
12	Factorise completely : i) $a^2 - ax$ ii) $3a^3 - 9$ iii) $\pi R^2 - \pi r^2$ iv) $8a^4b^2c^3 + 12a^2b^2c^4$ v) $28x^3y^3 - 21x^4y^3 - 14x^5y^5$ vi) $(x - 2y)^2 - 2(x - 2y)$ vii) $3xy + 3x + 4y + 4$ viii) $9pq + 4q - 9p - 4$ ix) $2a + 6b - 3(a + 3b)^2$ x) $(x - y) - 2xy(y - x)$ xi) $25a^2 - 9b^2$ xii) $48a^2b - 243b^3$ xiii) $\left(\frac{1}{625}x^2 - \frac{1}{9}y^2\right)$ xiv) $y^3 - \frac{y}{9}$ xv) $9x^2 + 30x + 25$ xvi) $2x^3 + 24x^2 + 72x$ xvii) $4m^2 - 44mn + 121n^2$ xviii) $x^4 - 625y^4$ xix) $x^2 + 11x + 30$ xx) $q^2 - 7q + 12$ xxi) $y^2 - 17y - 60$ xxii) $4a^2 - 4a - 36$
13	Divide: i) $35x^6y^4 \div 7x^2y^2$ ii) $(10x^7 - 8x^6 + 3x^4) \div x^3$ iii) $8x(9x + 15) \div 4(3x + 5)$ iv) $75xyz(4x - 8)(5y - 15) \div 125(x - 2)(y - 3)$ v) $(x^2 - x - 90) \div (x - 10)$ vi) $51x^3(98x^2 - 32) \div 34x^2(7x + 4)$