

**BHARATIYA VIDYA BHAVAN'S V.M.PUBLIC SCHOOL
VADODARA**

Date:	Worksheet-Algebraic expressions and Identities	Subject: Mathematics
Class: VIII	Name of the student:	

- 1) What should be subtracted from $2x^2 - y^2 + 3$ to get $-4x^2 + y^2 - 2$?
- 2) What should be added to $-p^2q^2 + pq - 5$ to get $-10 + 3q^2p^2 - 7pq$?
- 3) From the sum of $-8+3l$ and $4-4lm$, subtract the sum of $5lm-2l$ and $-lm+7l+9$.
- 4) Simplify:
 - a) $(2xy-4yz-3zx) - (xy-4yz+4zx)$
 - b) $(3x^2 + x - 1) - (4 - 2x^2 - x) + x^2 - 3$
- 5) Simplify: $3a(a-b) + b(a+b)$ and evaluate for $a=1, b=-1$
- 6) Multiply $xyz(2xy^2 - xz^2 + yz)$. Also verify the result for $x=-1, y=-2, z=2$
- 7) Find the product of the following:
 - a) $(a^2b - b^2a + 1)(1 - a)$
 - b) $(4a - 3b + 5c)(4a + 3)$
- 8) Simplify:
 - a) $(2xy-4yz-3zx) - (xy-4yz+4zx)$
 - b) $(3x^2 + x - 1) - (4 - 2x^2 - x) + x^2 - 3$
 - c) $2x^2(x^3 - x) - 3x(x^4 + 2x) - 2(x^4 - 3x^2)$
 - d) $(a^2-3a+2)(5a-2) - (3a^2 + a - 5)(2a - 1)$
- 9) Divide the following:
 - a) $(12a^2 - 8a) \div 2a$
 - b) $(13b^8 - 9b^6 + 7b^4) \div b^4$
 - c) $(7l^3 m^6 - l^6 m^3) \div 7l^3 m^3$
- 10) Divide $x^4 + x^3 + 8x^2 + x + 7$ by $x^2 + 1$ and verify the division algorithm.
- 11) Divide using the method of long division:
 - a) $6x^3 - 10x^2 + x$ by $x - 1$
 - b) $2x^4 - 9x^3 + 21x^2 - 26x + 12$ by $2x - 3$
- 12) The product of two expressions is $(x^4 + x^2 + 1)$. If one of the expressions is $(x^2 + x + 1)$, find the other.
- 13) Is $(x+2)$ a factor of $4x^4 + 2x^3 - 3x^2 + 8x - 20$?
- 14) Evaluate using appropriate identity:
 - a) 68×69
 - b) 1002×998
 - c) If $x + \frac{1}{x} = 7$, find $\frac{1}{x^2} + x^2$.
 - d) If $2x+3y=8$ and $xy=-1$, find $4x^2 + 9y^2$