

M9

## Multiplying Polynomials – extension

- Apply the distributive property (“feed the chickens”) when applicable
- Apply the laws of exponents.

Examples: Multiply the given polynomials

|    |   |
|----|---|
| L1 | $5x^2(x^4 + 8) =$                                   |
| L2 | $3xy^2(xy + x + 7) =$                               |
| L3 | $-10x^2y(5x^2y + y^2 - 7y + 10) =$                  |
| L4 | $\frac{1}{3}x^3y(5xy^2 - 7x^2y + 6xy - 15x + 21) =$ |

## Practice

Examples: Multiply the given polynomials

|    |   |
|----|---|
| L1 | $-ab(5ab^2 - 10a^2b + 7ab) =$             |
| L2 | $-5r^2(14rs + 4r - 20s) =$                |
| L3 | $-0.3abc^2(3a^2bc + 5ab^3c + 8ab - 10) =$ |
| L4 | $2x^2y^3(3xy^2 - 7xz - 10yz^2) =$         |

## Multiplying Monomials

- Multiply the coefficients.
- Multiply the same variables by applying the laws of exponents.
- Write the resulting monomial in alphabetical order.

Examples:

1.  $(3xy^3z^5)(4x^5yz) =$

2.  $(12a^3b^2c^2)(3abc^4d) =$

3.  $-(3a^6b^2c^3)(5a^9b) =$

4.  $(-7x^4y^2z^{-6})(-8xy^3z^9) =$

Practice

|           |   |
|-----------|---|
| <b>L1</b> | $(11ab^4c^5)(9a^6c^3d) =$                     |
| <b>L2</b> | $(-2r^4s^4t^2)(-6r^5s^3t^5) =$                |
| <b>L3</b> | $(3mn^5)(m^5n^{-3}p^5)(-2m^4n^{-4}p^8) =$     |
| <b>L4</b> | $(3xz^5y^{-6})(x^{-3}y^5z)(-9x^9y^{14}z^8) =$ |