

Bell Work:

For # 1 – 3, use this polynomial. $4x^3 + 5x - 7x^4 - 8$

1. What is the degree of the polynomial?
2. What is the leading coefficient?
3. What is the polynomial's name?
4. $(2x^2 - 4x - 7 + x^4) - (5x^2 - 8 - 6x^3 + 9x) =$

Multiply the polynomials.

$$1. (3x + 3)(x - 3) = 3x^2 - 9x + 3x - 9 = 3x^2 - 6x - 9$$

FOIL:

Multiply the first terms.

Multiply the outside terms.

Multiply the inside terms.

Multiply the last terms.

Combine like terms.

Multiply the polynomials.

$$6. (6x - 7)^2 = (6x - 7)(6x - 7) = 36x^2 - 42x - 42x + 49$$

FOIL:

$$= 36x^2 - 84x + 49$$

Multiply the first terms.

Multiply the outside terms.

Multiply the inside terms. (This will be the same as O.)

Multiply the last terms.

Combine like terms.

Multiply the polynomials.

$$7. (6r - 1)(6r + 1) = 36r^2 - 1$$

FOIL:

Multiply the first terms.

Only multiply F & L.

Multiply the last terms.

O and I cancel themselves.

Multiply the polynomials.

$$9. (2r - 7)(8r^2 + 8r + 2) = 16r^3 + 16r^2 + 4r$$

Multiply every term in the 1st polynomial with every term in the 2nd polynomial.

$$-56r^2 - 56r - 14$$

$$= 16r^3 - 40r^2 - 52r - 14$$

Line up like terms.

Multiply the polynomials.

$$\begin{aligned}
 12. \quad (4b^2 + 2b + 5)(2b + 4) &= 8b^3 + 16b^2 \\
 &\quad + 4b^2 + 8b \\
 &\quad + 10b + 20 \\
 &= 8b^3 + 20b^2 + 18b + 20
 \end{aligned}$$

Multiply every term in the 1st polynomial with every term in the 2nd polynomial.

Line up like terms

Multiply the polynomials.

*Line up
like terms*

$$14. (-2n^2 + 3n + 6)(2n^2 - 3n + 5) =$$

Multiply every term in the 1st polynomial with every term in the 2nd polynomial.

$$\begin{array}{r} -4n^4 + 6n^3 - 10n^2 \\ + 6n^3 - 9n^2 + 15n \\ + 12n^2 - 18n + 30 \end{array}$$

$$= -4n^4 + 12n^3 - 7n^2 - 3n + 30$$

Assignment:

Multiplying Polynomials Worksheet