

18 Operations w/ Polynomials

Evaluate for $x = -3$ *Evaluate $f(-3)$

} Mean the Same



$$-x^2 - 3x + 2$$

$$-(-3)^2 - 3(-3) + 2$$

$$-9 + 9 + 2$$

$$\boxed{2}$$

$$\begin{array}{r|l} x & y \\ -3 & 2 \end{array}$$

Evaluate for $x = 4$

Evaluate $f(4)$

$$f(x) = x^3 - x^2 - x + 5$$

$$f(4) = (4)^3 - (4)^2 - (4) + 5$$
$$= 64 - 16 - 4 + 5$$

$$f(4) = 49$$



Find the sum:

$$(6x^3 + 3x^2 - 7) + (8 - 2x - 6x^2 + 2x^3)$$

$$6x^3 + 3x^2 - 7 + 8 - 2x - 6x^2 + 2x^3$$

$$8x^3 - 3x^2 - 2x + 1$$

Cubic w/ 4 terms

Standard form
highest degree to
lowest degree

Collect
like
Terms



Find the difference:

$$(8x^3 - 4x^2 + 5x - 1) - (3 - 3x + 2x^2 + 2x^3)$$

$$8x^3 - 4x^2 + 5x - 1 - 3 + 3x - 2x^2 - 2x^3$$

$$6x^3 - 6x^2 + 8x - 4$$



Distribute
the
negative

Collect
like terms

Find the product:

$$(2x^2 - 5x + 2)(3x^2 - 2x + 10)$$

$$\begin{array}{r} 6x^4 - 4x^3 + 20x^2 \\ -15x^3 + 10x^2 - 50x \\ 6x^2 - 4x + 20 \\ \hline \end{array}$$

$$6x^4 - 19x^3 + 36x^2 - 54x + 20$$

Quartic w/ 5 terms