

Quiz Review

Answer Key

Name _____

Decide whether the function is a polynomial function. If it is, write the function in standard form.

$$f(x) = 5 + 2x$$

yes,

$$\boxed{f(x) = 2x + 5}$$

$$h(x) = 15 + 3x^{-2} + x$$

No! there is a negative Exponent!

$$g(x) = 2^x$$

NO, there is a variable in the exponent!

$$k(x) = \frac{1}{2}x^4 - x^2 + 3x^3$$

$$\boxed{k(x) = \frac{1}{2}x^4 + 3x^3 - x^2}$$

State the degree, type, and leading coefficient (L.C.) of the polynomial.

$$f(x) = 2x^2 - 4x + 9$$

Degree: 2

Type: Quadratic Trinomial

L.C.: 2

$$g(x) = 7 - 3x$$

Degree: 1

Type: Linear binomial

L.C.: -3

$$h(x) = -\frac{3}{4}x^3 + 2x^4 + 7$$

Degree: 4

Type: Quartic Trinomial

L.C.: 2

Use direct substitution to evaluate the polynomial function for the given value of x.

$$f(x) = 3x^3 + 4x^2 - 5x + 7; x = 1$$

$$f(1) = 3(1)^3 + 4(1)^2 - 5(1) + 7$$

$$\boxed{f(1) = 9}$$

$$g(x) = x^5 - 2x + 3x^2 - 9; x = 2$$

$$g(2) = (2)^5 - 2(2) + 3(2)^2 - 9$$

Use synthetic substitution to evaluate the polynomial function for the given value of x.

$$g(x) = 2x^3 - 5x^2 + 4x - 1; x = 1$$

$$\begin{array}{r|rrrr}
 1 & 2 & -5 & 4 & -1 \\
 & \downarrow & & & \\
 \hline
 & 2 & -3 & 1 & 0
 \end{array}$$

$$\boxed{f(1) = 0}$$

$$f(x) = x^4 + 7x^3 + x^2 - 2x - 6; x = -3$$

$$\begin{array}{r|rrrrr}
 -3 & 1 & 7 & 1 & -2 & 6 \\
 & \downarrow & & & & \\
 \hline
 & -3 & -12 & 33 & -93 & \\
 & 1 & 4 & -11 & 31 & -87
 \end{array}$$

$$\boxed{f(-3) = -87}$$

* Don't Forget Place holder if needed!! *