# Adv. Algebra 2 – Concept Quiz

Name: *Key

**Form A**

Date: _____ Period: _____

**10. What is a Polynomial?**

1. Use, $f(x) = 9x - 4 + 5x^3 - 4x^2$ , to answer the questions below:

a) Write $f(x)$ in standard form.

$f(x) = 5x^3 - 4x^2 + 9x - 4$

b) What is leading coefficient of $f(x)$?

5

c) What is the constant term of $f(x)$?

$-4$

d) What is the degree of $f(x)$?

3

2. Clare wants to make an open-top box by cutting out corners of a 30 inch by 25 inch piece of poster board and then folding up the sides. The volume $V(x)$ in cubic inches of the open-top box is a function of the side length $x$ in inches of the square cutouts.

a) Write an expression for $V(x)$.

$V(x) = (30-2x)(25-2x)x$

b) What is a reasonable domain for $V$ in this context?

$0 < x < 12.5$

**11. Add, Subtract, and Multiply Polynomials**

**a)** $(4x^3 + 3x^2 - 8x - 6) - (-x^3 - 4x^2 - 8x + 9)$

$4x^3 + 3x^2 - 8x - 6 + x^3 + 4x^2 + 8x - 9$

$5x^3 + 7x^2 - 15$

**b)** $(2x-5)^3$

$(2x-5)(2x-5)(2x-5)$

$(4x^2 - 20x + 25)(2x-5)$

$8x^3 - 40x^2 + 50x$

$-20x^2 + 100x - 125$

$8x^3 - 60x^2 + 150x - 125$

# Adv. Algebra 2 – Concept Quiz

**Form B**

Name: Key

Date: _____ Period: _____

**10. What is a Polynomial?**

1. Use, $f(x) = 6x - 9 + 8x^3 - 9x^4$ , to answer the questions below:

a) Write $f(x)$ in standard form.

$f(x) = -9x^4 + 8x^3 + 6x - 9$

b) What is leading coefficient of $f(x)$?

$-9$

c) What is the constant term of $f(x)$?

$-9$

d) What is the degree of $f(x)$?

$4$

2. Clare wants to make an open-top box by cutting out corners of a 50 inch by 35 inch piece of poster board and then folding up the sides. The volume $V(x)$ in cubic inches of the open-top box is a function of the side length $x$ in inches of the square cutouts.

a) Write an expression for $V(x)$.

$V(x) = (50-2x)(35-2x)x$

b) What is a reasonable domain for $V$ in this context?

$0 < x < 17.5$

**11. Add, Subtract, and Multiply Polynomials**

**a)** $(7x^3 + 5x^2 - 2x - 9) - (-4x^3 - x^2 + 11x + 2)$

$7x^3 + 5x^2 - 2x - 9 + 4x^3 + x^2 - 11x - 2$

$11x^3 + 6x^2 - 13x - 11$

**b)** $(3x - 7)^3$

$(3x-7)(3x-7)(3x-7)$

$(9x^2 - 42x + 49)(3x-7)$

$27x^3 - 126x^2 + 147x$

$-63x^2 + 294x - 343$

$27x^3 - 189x^2 + 441x - 343$