2nd Semester Benchmark Toolkit

Algebra 1 Benchmark 2.0 — **Topic: Rules of Exponents**

Simplify the following. Express without any negative exponents.

1. $8x^0y^{-4}$

$8(1)\left(\frac{1}{y^4}\right) = \frac{8}{y^4}$

2. $(5x^3y^5)(3x^4y)$

$15x^{3+4}y^{5+1} = 15x^7y^6$

3. $(5x^{-3}y^5)^2$

$(5)^2(x^{-3})^2(y^5)^2$

$25x^{-6}y^{10} = \frac{25y^{10}}{x^6}$

4. $\frac{8x^7y}{4x^{-3}y^6} = 2x^{7-(-3)}y^{1-6}$

$2x^{10}y^{-5} = \frac{2x^{10}}{y^5}$

Algebra 1 Benchmark 10.0 — **Topic: Adding, Subtracting, and Multiplying Polynomials**

Simplify the following:

1. $(x^2+4x-3)-2x(3x^3-x+6)$

$x^2+4x-3-6x^4+2x^2-12x$

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

2. $(3x-4)+(x+3)^2$

$(3x-4)+(x+3)(x+3)$

$(3x-4)+(x^2+3x+3x+9)$

x^2+9x+5

3. $(x-4)(x^2-3x+5)$

	x^2	$-3x$	$+5$
x	x^3	$-3x^2$	$5x$
-4	$-4x^2$	$12x$	-20

$x^3-7x^2+17x-20$

Algebra 1 Benchmark 11.1 — **Topic: Factoring Polynomials**

Factor the following polynomials:

1. x^2+x-30

-30, 6, -5, 1

$(x+6)(x-5)$

2. $2x^2+3x-14$

-28, 7, -4, 3

$(x+\frac{7}{2})(x-\frac{4}{2})$

$(2x+7)(x-2)$

3. $2y^3+8y^2-10y$

GCF: $2y(y^2+4y-5)$

-5, -1, 5, 4

$2y(y-1)(y+5)$