

BOY ASSESSMENT ALGEBRA I STANDARDS REFERENCE MATERIALS

FACTORING

Perfect square trinomials

$$a^2 + 2ab + b^2 = (a + b)^2$$

$$a^2 - 2ab + b^2 = (a - b)^2$$

Difference of squares

$$a^2 - b^2 = (a - b)(a + b)$$

PROPERTIES OF EXPONENTS

Product of powers

$$a^m a^n = a^{(m+n)}$$

Quotient of powers

$$\frac{a^m}{a^n} = a^{(m-n)}$$

Power of a power

$$(a^m)^n = a^{mn}$$

Rational exponent

$$a^{\frac{m}{n}} = \sqrt[n]{a^m}$$

Negative exponent

$$a^{-n} = \frac{1}{a^n}$$

LINEAR EQUATIONS

Standard form

$$Ax + By = C$$

Slope-intercept form

$$y = mx + b$$

Point-slope form

$$y - y_1 = m(x - x_1)$$

Slope of a line

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

QUADRATIC EQUATIONS

Standard form

$$f(x) = ax^2 + bx + c$$

Vertex form

$$f(x) = a(x - h)^2 + k$$

Quadratic formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Axis of symmetry

$$x = \frac{-b}{2a}$$