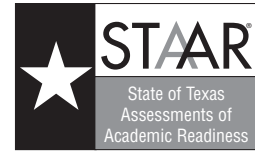


# STAAR ALGEBRA II REFERENCE MATERIALS



## FACTORING

Perfect square trinomials

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

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

Difference of squares

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

Sum of cubes

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

Difference of cubes

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

## 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

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

## QUADRATIC EQUATIONS

Standard form

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

Vertex form

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

Parabola

$$(x - h)^2 = 4p(y - k)$$

$$(y - k)^2 = 4p(x - h)$$

Quadratic formula

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

Axis of symmetry

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