STAAR ALGEBRA I 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 $a^m a^n = a^{(m-n)}$ Power of a power $(a^m)^n = a^{mn}$ Rational exponent $a^{-n} = \frac{1}{a^n}$ LINEAR EQUATIONSStandard 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 EQUATIONSStandard 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 $x = \frac{-b}{2a}$		
PROPERTIES OF EXPONENTSProduct of powers $a^m a^n = a^{(m+n)}$ Quotient of powers $\frac{a^m}{a^n} = a^{(m-n)}$ Quotient of powers $(a^m)^n = a^{mn}$ 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 EQUATIONSStandard form $Ax + By = C$ Slope-intercept form $y = mx + b$ Point-slope form $y - y_1 = m(x - x_2)$ Slope of a line $m = \frac{y_2 - y_1}{x_2 - x_1}$ QUADRATIC EQUATIONSStandard form $f(x) = ax^2 + bx + c$ Vertex form $f(x) = a(x - h)^2 + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Perfect square trinomials	
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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 EQUATIONSStandard form $Ax + By = C$ Slope-intercept form $y = mx + b$ Point-slope form $y - y_1 = m(x - x_1)$ Slope of a line $m = \frac{V_2 - V_1}{X_2 - x_1}$ QUADRATIC EQUATIONSStandard form $f(x) = ax^2 + bx + c$ Vertex form $f(x) = a(x - h)^2 + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	PROPERTIES OF EXPONENTS	
Power of a power $(a^m)^n = a^{mn}$ Rational exponent $a^{\frac{m}{n}} = \sqrt[q]{a^m}$ Negative exponent $a^{-n} = \frac{1}{a^n}$ LINEAR EQUATIONSStandard 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 EQUATIONSStandard form $f(x) = ax^2 + bx + c$ Vertex form $f(x) = a(x - h)^2 + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Product of powers	$a^m a^n = a^{(m+n)}$
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 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Quotient of powers	$\frac{a^m}{a^n} = a^{(m-n)}$
Negative exponent $a^{-n} = \frac{1}{a^n}$ LINEAR EQUATIONSStandard 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 EQUATIONSStandard formStandard form $f(x) = ax^2 + bx + c$ Vertex form $f(x) = a(x - h)^2 + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Power of a power	$(a^m)^n = a^{mn}$
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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 EQUATIONSStandard form $f(x) = ax^2 + bx + c$ Vertex form $f(x) = a(x - h)^2 + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Negative exponent	$a^{-n} = \frac{1}{a^n}$
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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 EQUATIONSStandard form $f(x) = ax^2 + bx + c$ Vertex form $f(x) = a(x - h)^2 + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Standard form	Ax + By = C
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 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Slope-intercept form	y = mx + b
QUADRATIC EQUATIONSStandard form $f(x) = ax^2 + bx + c$ Vertex form $f(x) = a(x - h)^2 + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Point-slope form	$y - y_1 = m(x - x_1)$
Standard form $f(x) = ax^{2} + bx + c$ Vertex form $f(x) = a(x - h)^{2} + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^{2} - 4ac}}{2a}$	Slope of a line	$m = \frac{y_2 - y_1}{x_2 - x_1}$
Vertex form $f(x) = a(x - h)^{2} + k$ Quadratic formula $x = \frac{-b \pm \sqrt{b^{2} - 4ac}}{2a}$	QUADRATIC EQUATIONS	
Quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Standard form	$f(x) = ax^2 + bx + c$
	Vertex form	$f(x) = a(x-h)^2 + k$
Axis of symmetry $x = \frac{-b}{2a}$	Quadratic formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
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