

Quadratic Relations

Laws + Formulas

Standard Form - $y=ax^2+bx+c$

Ex.

Vertex Form - $y=a(x-h)^2+k$

Ex.

Factored Form - $ax^2+bx+c=a(x-p)(x-q)$

Ex.

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

Ex.

Axis of Symmetry - $x = -b / 2a$

Ex.

Factoring

Laws + Formulas

Factoring an Expression - $ax^2+bx+c=(px+q)(rx+s)$

Ex.

Difference of Squares - $a^2-b^2=(a-b)(a+b)$

Ex.

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

Ex.

Factor by Grouping - When expression has 4 terms, group into pairs, factor out GCF, then factor out common binomial.

Ex.

Trigonometry

Laws + Formulas

Trig Ratios

Sine (SOH) - $\sin\theta = \text{opposite} / \text{hypotenuse}$

Ex.

Cosine (CAH) - $\cos\theta = \text{adjacent} / \text{hypotenuse}$

Ex.

Tangent (TOA) - $\tan\theta = \text{opposite} / \text{adjacent}$

Ex.

Sine Law

Solving for Angle - $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

Ex.

Solving for Side - $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Ex.

Cosine Law

Solving for Angle - $\cos A = \frac{b^2+c^2-a^2}{2bc}$

Ex.

Solving for Side - $a^2 = b^2+c^2-2bc \cos A$

Ex.

Explanation

Standard Form :

Vertex Form :

Factored Form :

Axis of Symmetry :

Axis of Symmetry :

Explanation



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Page 1 of 1.

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