Parabolas

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Vertexes

Vertex of a Parabola (From Standard Form)

if $Y = AX^2 + BX + C$

if $B = 1$

if $A = 2$

$-(B/2A) = -(1/2(2)) = -(1/4)$

Find Y from Vertex

1. Take vertex
2. Arrange original formula in terms of Y
3. Replace value of X with Vertex's
4. Simplify Formula
5. Profit

Convert Standard to Vertex Form

Example Equation

if $Y = X^2 + 6X + -5$

1. Find Half of B $Y = X^2 + 6X + 3^2 - 5 - 3^2$
2. Square it $Y = X(X + 3) - 5 - 3^2$
3. Simplify it $Y = X(X + 3) - 5 - 9$

$Y = X(X + 3) - 14$

VERTEX $= (-3, -14)$