Chapter 2
Quadratic Functions

Section 2-4
Modeling with Quadratic Equations

Writing Quadratic Equations

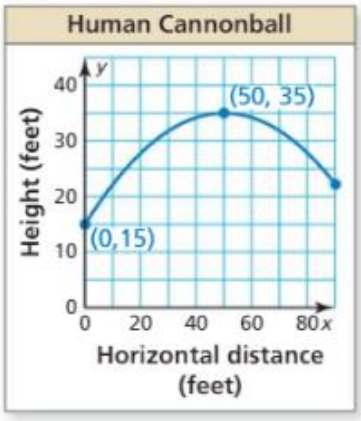
Core Concept

Writing Quadratic Equations

Given a point and the vertex (h, k)	Use vertex form: $y = a(x - h)^2 + k$
Given a point and x-intercepts p and q	Use intercept form: $y = a(x - p)(x - q)$

Tutorial

EXAMPLE 1 **Writing an Equation Using a Vertex and a Point**



The graph shows the parabolic path of a performer who is shot out of a cannon, where y is the height (in feet) and x is the horizontal distance traveled (in feet). Write an equation of the parabola. The performer lands in a net 90 feet from the cannon. What is the height of the net?

2.

Write an equation of the parabola that passes through the point $(-1, 2)$ and has vertex $(4, -9)$.

3.

Write an equation of the parabola that passes through the point $(2, 5)$ and has x-intercepts -2 and 4.