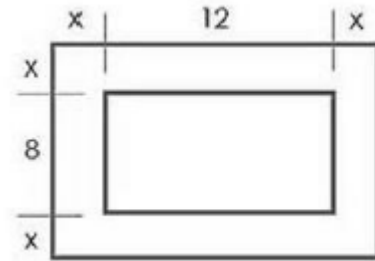


Unit 1/2 Remediation

Skill Set	In Class Example	You Try
Factor Completely Solve by Square Root	Factor completely: $2x^3 + 4x^2 - 6x$	Factor completely: $6x^4 - 27x^3 - 15x^2$
	Solve: $x^2 + 2 = 6$	Solve: $5x^2 - 28 = 27$
Transformations Switch Forms of a Quadratic Rate of Change	<p>The parent function $f(x) = x^2$ is reflected across the x-axis, vertically stretched by a factor of 4 and translated right 3 units to create $g(x)$.</p> <p>Use the description to write the quadratic function in vertex form.</p>	<p>Starting with a parent function of $f(x) = x^2$, describe the transformations need to graph the function</p> $g(x) = -\frac{1}{2}(x + 6)^2 + 8$?
	Convert $x^2 + 6x + 11$ to vertex form.	If the equation $x^2 - 12x - 9 = 0$ is converted to the form $(x - b)^2 + c$ by completing the square, write the resulting equation.
	Calculate the average rate of change of $f(x) = 4x^2 + 3x + 5$ on the interval $[2, 5]$.	For the function $f(x) = -2x^2 + 12x - 10$ find the rate of change from $[-1, 3]$.

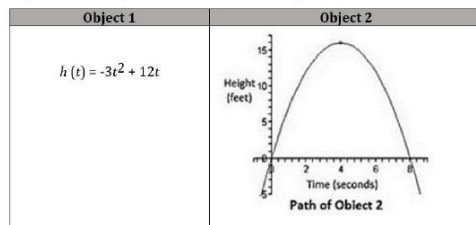
A softball is thrown into the air with an initial velocity of 5 meters per second from a height of 9 meters. The equation $h(t) = -4.9t^2 + 5t + 9$ models the distance of the softball from the ground in meters after t seconds. How many seconds does it take for the softball to hit the ground?

A garden measuring 8 feet by 12 feet has a walkway around it. The walkway has a uniform width, and the area covered by the garden and walkway is 192 square feet. What is the width (x) of the walkway?

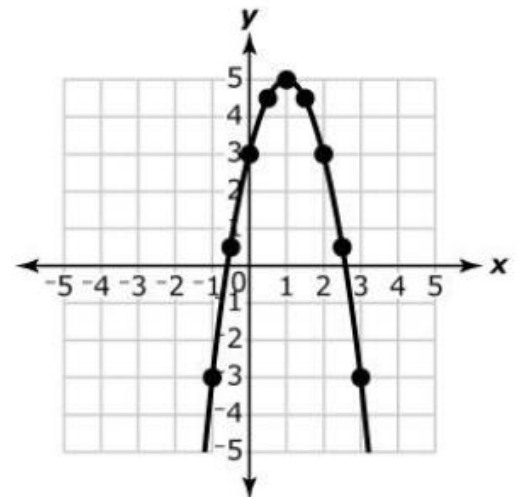


Applications
Comparing

Two objects are launched from ground level at the same time. The height of Object 1 is represented by $h(t) = -3t^2 + 12t$. The graph shows the path of Object 2. Which object will reach maximum height first?



Which equation has a greater maximum value than the function in the graph?



- a) $f(x) = -3(x + 1)^2 + 3$
- b) $f(x) = -2(x - 1)^2 + 4$
- c) $f(x) = -4(x - 6)^2 + 5$
- d) $f(x) = -5(x - 3)^2 + 7$