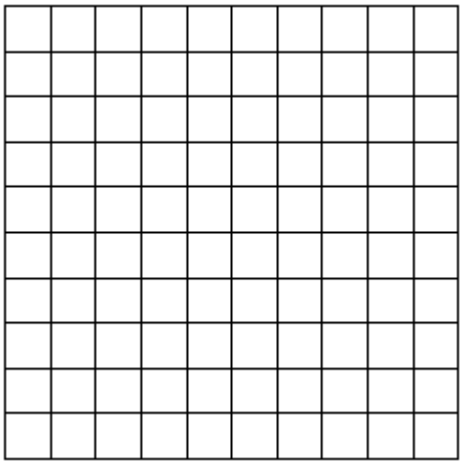
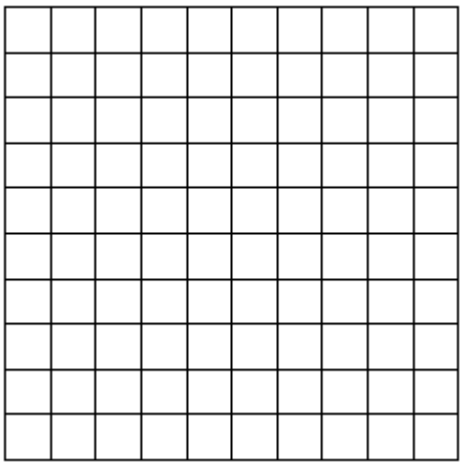
Algebra 2: Quadratic Problem Solving

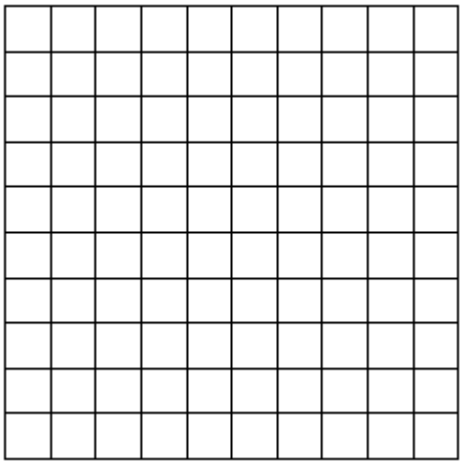
1. An object is launched at 19.6 meters per second (m/s) from a 58.8-meter tall platform. The equation for the object's height s at time t seconds after launch is $s(t) = -4.9t^2 + 19.6t + 58.8$ where s is in meters. When does the object strike the ground?

Work	Graph
	

2. An object in launched directly upward at 64 feet per second (ft/s) from a platform 80 feet high. The equation for the object's height s at time t seconds after launch is $s(t) = -16t^2 + 64t + 80$ where s is in feet. What will be the object's maximum height? When will it attain this height?

Work	Graph
	

3. An object is launched from ground level directly upward at 39.2 m/s. The equation for the object's height s at time t seconds after launch is $s(t) = -4.9t^2 + 39.2t$ where s is in meters. For how long is the object at or above a height of 34.3 meters?

Work	Graph
	

*4. After the semester is over, you discover that the math department has changed textbooks (again) so the bookstore won't buy back your nearly-new book. You and your friend Herman decide to get creative. You go to the roof of a twelve-story building and look over the edge to the reflecting pool 160 feet below. You drop your book over the edge at the same instant that Herman chucks his book straight down at 48 feet per second. By how many seconds does his book beat yours into the water?

Work	Graph