

ALGEBRA RH**QUADRATIC APPLICATIONS PRATICE**

1. Courtney is building a rectangular wading pool. She wants the area of the bottom to be $54ft^2$. She also wants the length of the pool to be 3 feet longer than twice the width. What are the dimensions of the pool?

2. A water balloon is catapulted into the air so that its height h , in meters, after t seconds is $h(t) = -5t^2 + 25t + 2$.
 - a. How high is the balloon after 1 second?

 - b. When is the balloon 32 meters or higher?

 - c. What is the maximum height of the balloon?

 - d. When will the balloon burst upon hitting the ground? Round to the nearest hundredth.

3. A rectangular mural is to be drawn centered on a wall in the school cafeteria as shown below. The wall is 16m by 12m and the mural needs to cover 75% of the total area of the wall. What are the dimensions, to the nearest tenth, of the mural? Solve algebraically.



4. The function $h = -16t^2 + 1700$ gives an object's height h , in feet, at t seconds.
- What does the number 1700 mean in context?
 - What does the coefficient of t^2 tell you about the end behavior of the object.
 - When will the object be 676 feet above the ground?
 - What is a reasonable domain and range for this function? Express in both inequality notation and interval notation.