

Process Standards:

Students will be able to:

- Interpret results in ways that are meaningful for the given context.
- Effectively communicate their mathematical knowledge.
- Exhibit characteristics of a cooperative learner.
- Organize class materials so that they are easily accessible and able to be used as an additional resource in problem solving situations.

Content Standards:

Students will be able to:

- Select and apply appropriate computational strategies to problem solving and life situations.
- Use technology to assist in data collection and interpretation of functions.
- Perform operations and transformations on functions, polynomials, and other mathematical entities.
- Recognize equivalent forms of an expression, equation, function or relation.
- Generate equivalent forms of an expression, equation, function or relation.
- Interpret and describe classes of functions through rules, tables and graphs.
- Interpret situations that involve variable quantities.
- Solve problems that involve quantities.
- Model a wide range of phenomena using a variety of functions.
- Find intercepts, local extreme values, and asymptotic behavior of functions.
- Interpret intercepts, local extreme values, and asymptotic behavior of functions in given contexts.
- Select and produce appropriate graphical representations.

It's now time to return to the central problem of this unit. As you will recall, the Naperville Central Freshman football team is helping to plan a fireworks display. The display will use rockets launched from the top of a tower that is 160 feet off the ground. Each rocket will be rising initially at 96 feet per second. The football team knows that the rocket's height off the ground (in feet) after t seconds can be found using the function $h(t) = 160 + 96t - 16t^2$. Use what we have learned about changing equations in standard form into vertex form in order to find out

EXACTLY how long it will take for the rocket to reach its maximum height and what that maximum height is. Each group will be presenting their results to the class tomorrow.