

MATHEMATICS - ALGEBRA II

Subject: Algebra II

Academic Standard: A2.1

Academic Standard Indicator: A2.1.1

Core Standard: No

Standard Description (Academic or Indicator): Recognize and graph various types of functions, including polynomial, rational, and algebraic functions.

Suggestion for Integrating International Content: Have students explore whether the global climate is warming by collecting and graphing average annual temperature data from countries around the world over a period of time. Then have them look for a possible pattern and determine if the relation can be modeled by a function.

Subject: Algebra II

Academic Standard: A2.1

Academic Standard Indicator: A2.1.7

Core Standard: No

Standard Description (Academic or Indicator): Graph functions defined piecewise.

Suggestion for Integrating International Content: Have students determine the highway speeding fines in different countries. Then have them graph and write the piecewise functions associated with each fine increase due to higher speeds.

Subject: Algebra II

Academic Standard: A2.2

Academic Standard Indicator: A2.2.4

Core Standard: No

Standard Description (Academic or Indicator): Find a linear equation that models a set of data using the media-median method and use the model to make predictions.

Suggestion for Integrating International Content: Have students compare the monetary values of currencies of other countries to the U.S. dollar. Then have them graph and model the

relation with a linear equation to determine the exchange rate. **Suggested resource:** <http://www.oanda.com/currency/converter/>.

Subject: Algebra II

Academic Standard: A2.3

Academic Standard Indicator: A2.3.6

Core Standard: No

Standard Description (Academic or Indicator): Solve equations that contain radical expressions.

Suggestion for Integrating International Content: Using "distance to horizon" equations, have students determine the largest possible distance that could be viewed from the highest point on each continent.

Subject: Algebra II

Academic Standard: A2.7

Academic Standard Indicator: --

Core Standard: No

Standard Description (Academic or Indicator): Students graph exponential functions and relate them to logarithms. They solve logarithmic and exponential equations and inequalities. They solve word problems using exponential functions.

Suggestion for Integrating International Content: Have students analyze the change in population of different countries around the world over time to determine whether their growth has been exponential. If so, have students graph and model the populations over time.

Subject: Algebra II

Academic Standard: A2.7

Academic Standard Indicator: A2.7.8

Core Standard: Yes

Standard Description (Academic or Indicator): Solve word problems involving applications of exponential functions to growth and decay.

Suggestion for Integrating International

Content: Have students examine the spread of international diseases such as HIV-AIDS or Ebola over time, either in selected countries or across the world as a whole. Then have them determine a growth or decay model for the relationship between number of victims and time.

Subject: Algebra II

Academic Standard: A2.9

Academic Standard Indicator: A2.9.1

Core Standard: Yes

Standard Description (Academic or Indicator): Understand and apply counting principles to compute combinations and permutations.

Suggestion for Integrating International

Content: For each of the continents except Antarctica, have students determine the number of ways to arrange its countries from first to last.
