

Solving Non-Linear Systems:

1. Refer back to your Day 37 Activity #7b. Using your graphing calculator, determine how long it will take for Sherri's account to double in value. For your window, use:

Xmin: -10
 Xmax:100
 Xscl: 20
 Ymin=-10
 Ymax=2,500
 Yscl=100

2. In the Land of the Lost, there are two different populations. Let the independent variable represent the time in years since 1974, t , and let the dependent variable represent the total population, S for number of Sleestaks, and P for number of Pakuni. Below are the functions for each population.

$$S(t) = 75(1.042)^t$$

$$P(t) = 215 - 22.5t$$

- a. Using your graphing calculator, determine how long it will take for the Sleestaks' population to reach 200. For your window, use:

Xmin: -10
 Xmax:50
 Xscl: 10
 Ymin=-10
 Ymax=500
 Yscl=100

- b. Using your graphing calculator, find the intersection of $S(t)$ and $P(t)$. For your window, use:

Xmin: -10
 Xmax:30
 Xscl: 10
 Ymin=-10
 Ymax=250
 Yscl=100

- c. Interpret the intersection you found in **part b** in the context of the problem.

Complete MML: Exponent Review