Good Viewing Window

Find a good viewing window for the graph of the function rule and find a good viewing window for the graph of the problem situation. Sketch the graph and record the window.

1. A model for the relationship of the weight and length of a humpback whale is \( w = -42.958 + 1.705l \), where \( l \) is the length in feet and \( w \) is the weight in long tons. (A long ton is about 2240 pounds.)

2. The rate at which a blood cell flows depends on the distance of the cell from the center of the artery. Research has determined that a mathematical model of this problem situation is \( v = 1.19 - (1.85 \times 10^4)r^2 \), where \( r \) is the distance (in cm) of the blood cell from the center of the artery and \( v \) is the velocity (in cm per second).

3. The function \( v = 2666x - 210x^2 + 4x^3 \) represents the volume of a certain box that has been made by removing equal squares of side length \( x \) from each corner of a rectangular sheet of material and then folding up the sides.

4. If you deposit $1000 into a savings account earning 8% interest compounded annually, the amount of money \( A \) you would have after time \( T \) is given by \( A = 1000(1.08)^T \).

5. A student found a model for the data collected from a tuning fork struck in front of a microphone, \( y = 0.341\cos(1643(x − 0.003)) \). Find a viewing window that includes two complete periods. Can you approximate the frequency of the tuning fork?

6. Find a good viewing window for the following functions. Sketch the function and record the window:
   a. \( y = .005x - 0.02 \)
   b. \( y = 20 \cdot 2^x \)
   c. \( y = -950x^2 + 950x - 600 \)
   d. \( y = 100 \sqrt{x} \)
   e. \( y = -|x - 10| - 6 \)
   f. \( y = x^3 - 10x^2 + 33x - 15 \)
   g. \( y = \frac{1}{x + 12} \)
   h. \( y = e^x \)
   i. \( y = \ln(x - 11) \)
   j. \( y = \tan x \)
   k. \( y = 0.02 \cos(0.2x) \)
   l. \( y = \sin(50x) \)