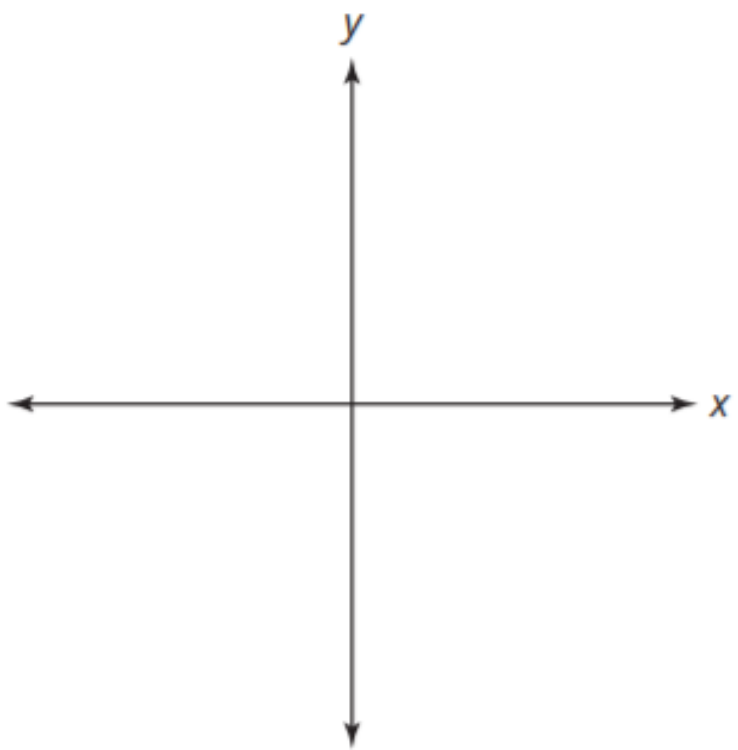
Warm Up

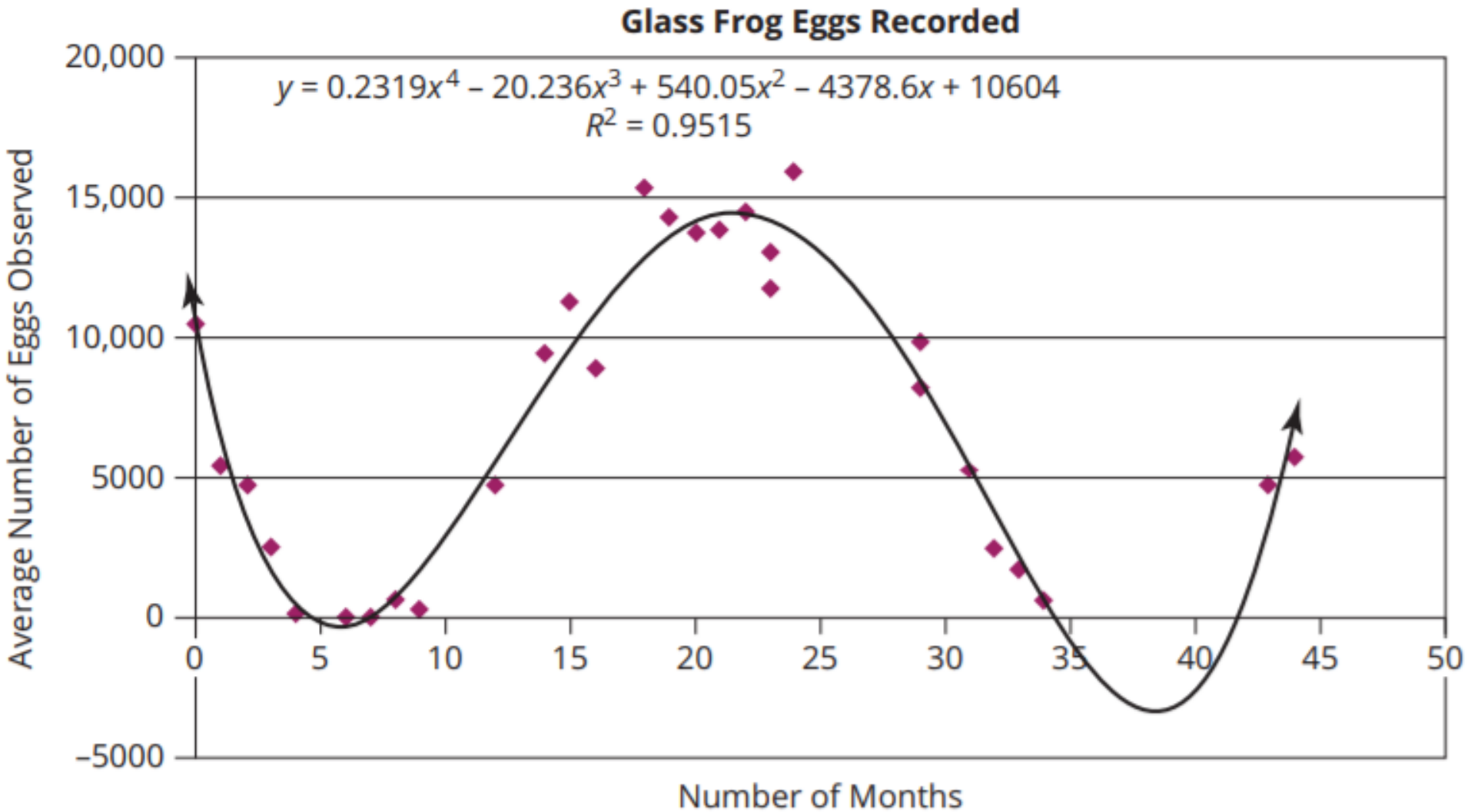
1. Sketch graphs of cubic functions with the given number of zeros. Describe the domain, range, and zeros of each function.

   a. 1 zero

   b. 2 zeros

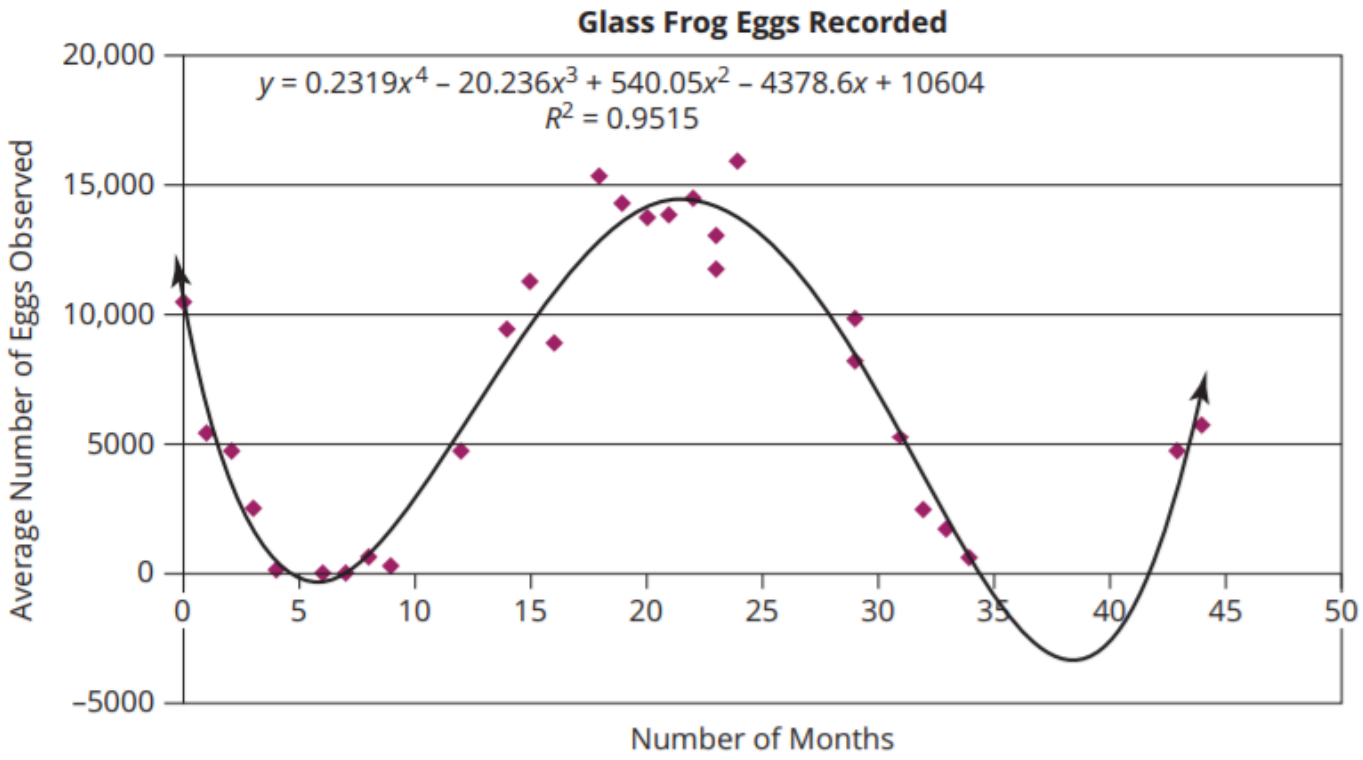
   c. 3 zeros





Answer the questions on the next few pages

Recall that a relative maximum is the highest point in a particular section of a function's graph, and a relative minimum is the lowest point in a particular section of the graph. Similarly, the **absolute maximum** is the highest point in the entire graph, and the **absolute minimum** is the lowest point in the entire graph. The set of relative maximums, relative minimums, absolute maximums, and absolute minimums may also be referred to as **extrema**. The extrema are also called *extreme points* and *extremum*.



An absolute maximum can also be considered a relative maximum. Usually only the more significant label of absolute maximum is used, with the term relative maximum implied. The same reasoning can be applied to an absolute minimum and a relative minimum.