

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## 13-1 Exploring Periodic Data

### State Standards

**A2. F.LE.A.2** (formerly F-TF.A.2) Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.

### Objectives

The students will identify cycles, periods and amplitude in periodic functions.

### Key Concepts

\_\_\_\_\_ - a function that repeats a pattern of y-values at regular intervals.

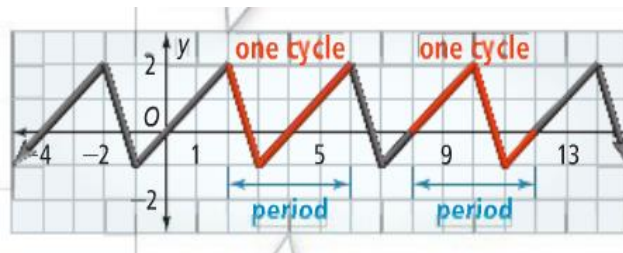
\_\_\_\_\_ - one complete pattern

\_\_\_\_\_ - the horizontal length of one cycle

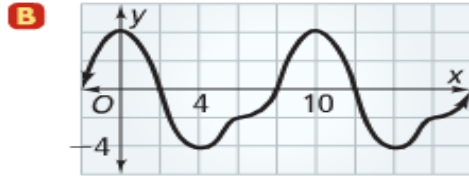
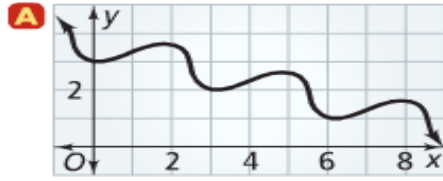
\_\_\_\_\_ - half the difference of the maximum and minimum values

### Examples

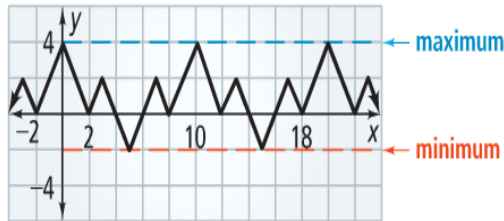
1. (I do) Identify the cycle in the periodic function. State the period.



2. (We do) Is the function periodic? If so, state the period.

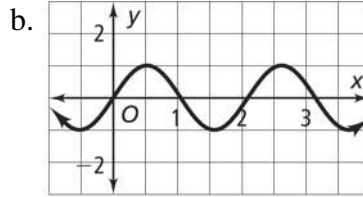
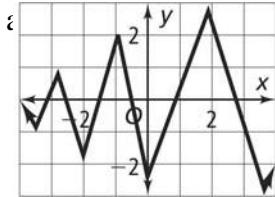


3. (They do) Find the amplitude of the periodic function.

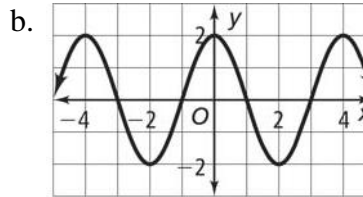
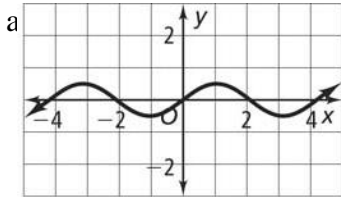


**You do Practice 13-1: Complete your assignment on a separate sheet of paper. Show all work.**

1. Determine if the function is periodic. If so, find the period.



2. Name a cycle two different ways. Then determine the period and amplitude.



3. Sketch the graph of a periodic function with period 8 and amplitude 3. State the maximum and minimum of your function.