

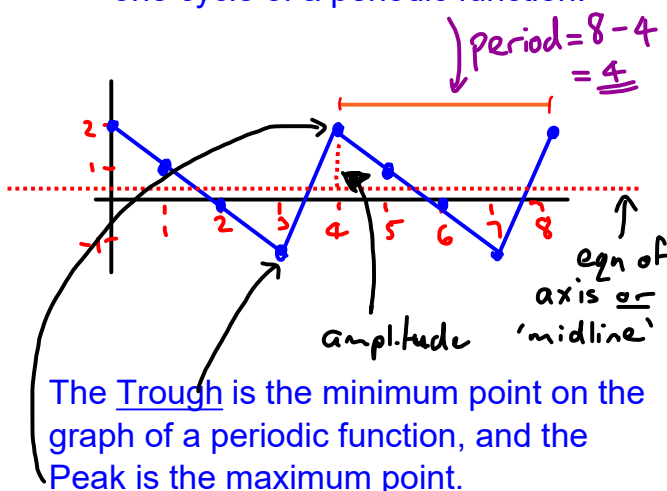
## 6.1 Periodic Functions and Their Properties

A Periodic Function is a function whose graph repeats at regular intervals. The y-values in the table of values of a periodic function show a repetitive pattern as the x-values change by equal increments.

eg.

x	y
0	2
1	1
2	0
3	-1
4	2
5	1
6	0
7	-1
8	2

The Period is the change in x over one cycle of a periodic function.



**Maximum Value:** Greatest value reached by variable on the vertical axis.

**(peak)**  
**Minimum Value:** Smallest value reached by variable on the vertical axis.

**(trough)**  
**Midline:** Horizontal line that divides the graph in half vertically.

$$\text{Midline} = \frac{\text{MaxValue} + \text{MinValue}}{2}$$

← 'The equation of the Axis' in the textbook

**Amplitude:** Half the difference between the maximum and minimum values. This is the distance from the midline to the maximum/minimum point on the graph.

$$\text{Amplitude} = \frac{\text{MaxValue} - \text{MinValue}}{2}$$

Positive distance from the equation of the axis to the max or min value

Homework: p 354 # 1-5, 6, 8 and 12