

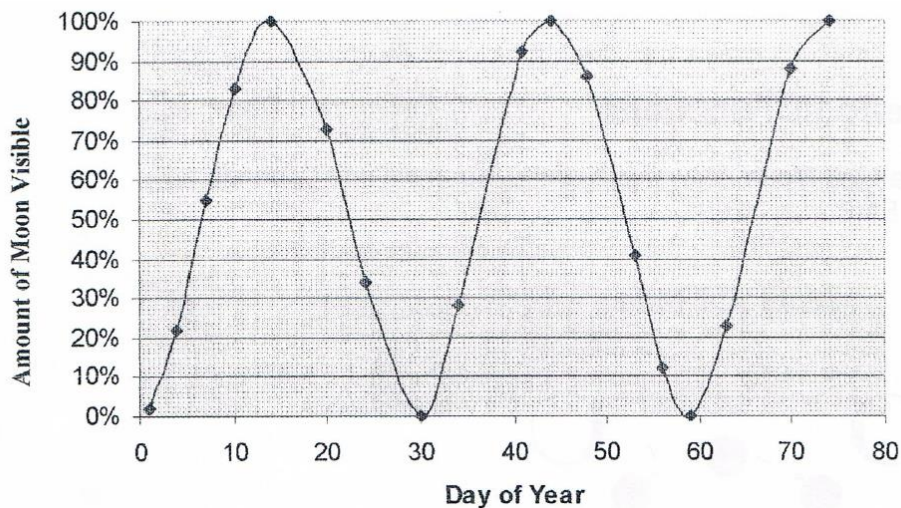
# Periodic Functions and their Characteristics

A periodic function is a function that repeats itself in a pattern or cycle.

A cycle is...

A period is...

Consider the periodic function below. It tells you what percentage of the moon is visible based on the day of the year.



- 1) Trace one cycle on this function.
- 2) What is the period of this function?
- 3) What is the range of this function?

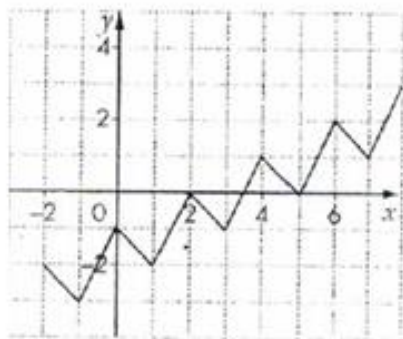
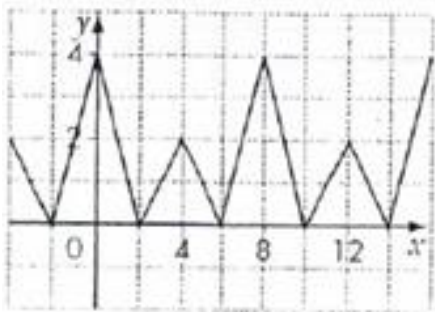
When working with periodic function we also talk about the following characteristics

4) Amplitude =  $\frac{\text{maximum value} - \text{minimum value}}{2}$

5) Equation of Axis:  $y = \frac{\text{maximum value} + \text{minimum value}}{2}$

Calculate these values for the graph above.

**Example:** Which of the following are periodic functions?



Find the period, amplitude and equation of axis for the functions that are periodic above.

Text page 235 #1, 2, 3, 6 and page 263 #14a

Text page 246 #9d- g (find all angles between 0 and 360), 10cf, 13, 18 (hint for 18 – draw a picture)