

Periodic Functions and Their Properties

Periodic Function

A function whose graph repeats at regular intervals; the y-values in the table of values show a repetitive pattern when the x-values change by the same increment.

Period

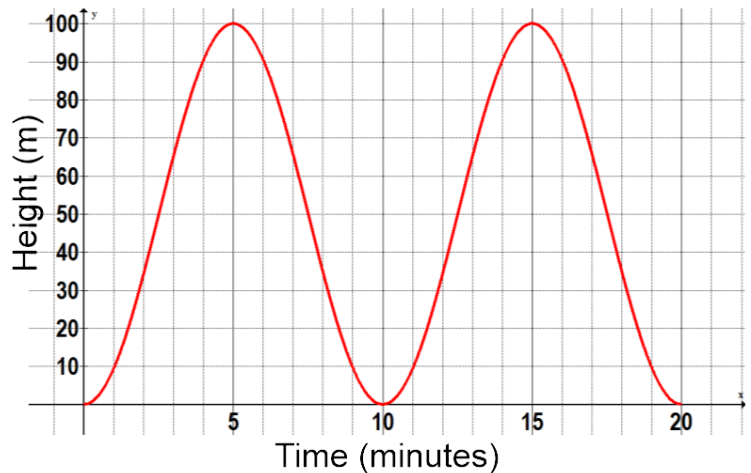
- the length of one _____
- the change in _____ variable corresponding to one cycle
- the portion of the graph that _____

Peak

The _____ point on a graph.

Trough

The _____ point on a graph.



Equation of the Axis

The equation of the _____ line _____ between the maximum and the minimum.

Determined by the equation:

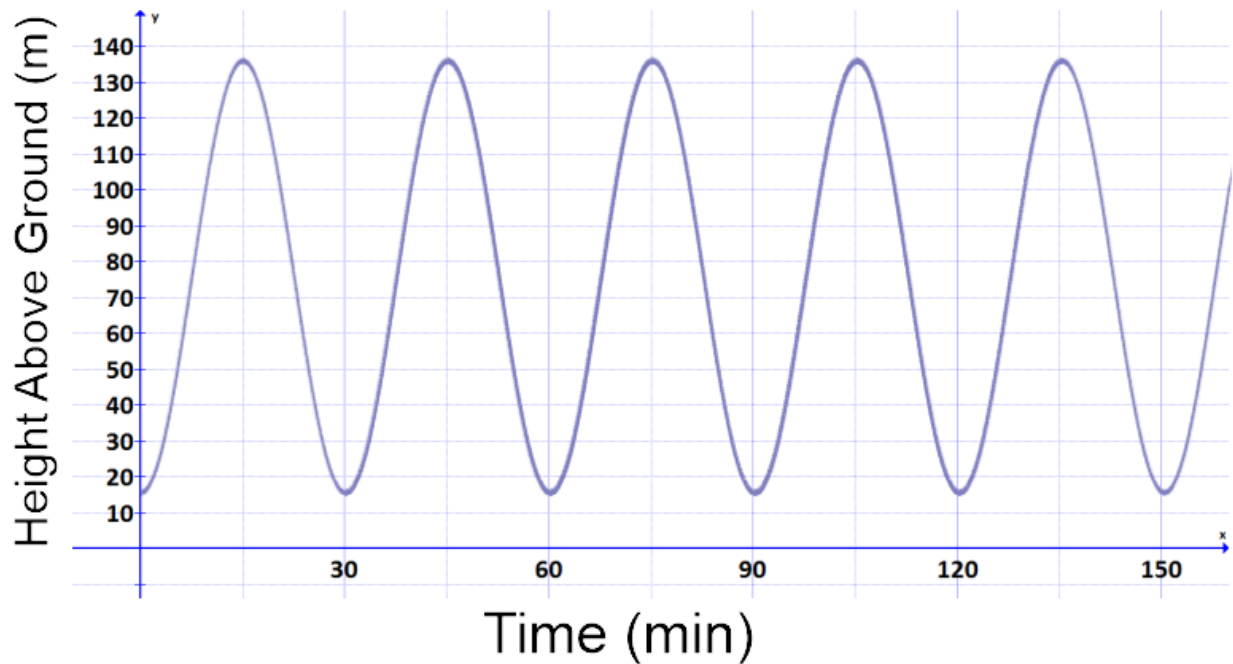
Amplitude

Half the _____ between the maximum and minimum values.

The vertical distance from the function's axis to the maximum or minimum value.

Determined by the equation:

The London Eye



1. How long does it take to get around once?
2. How tall is the London Eye?
3. What is its diameter?
4. What is its radius?
5. How high above the ground is the centre of the Ferris wheel?
6. What is the period of the periodic function of the London Eye?
7. Identify the peak of the periodic function.
8. Identify the trough of the periodic function.
9. Determine the equation of the axis of the periodic function.
10. Determine the amplitude of the periodic function.
11. **Challenge:** What is the speed of the Ferris wheel in metres per second?