

8.3 The Graphs of Sinusoidal Functions p. 527

Name _____

Date _____

Goal: Identify characteristics of the graphs of sinusoidal functions.

1. **sinusoidal function:** Any periodic function whose graph has the same shape as that of $y = \sin x$.

Key Ideas:

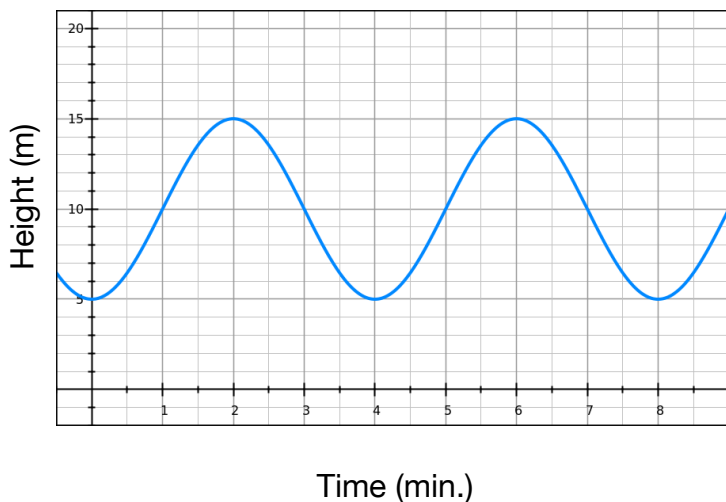
- Range =

- Amplitude =

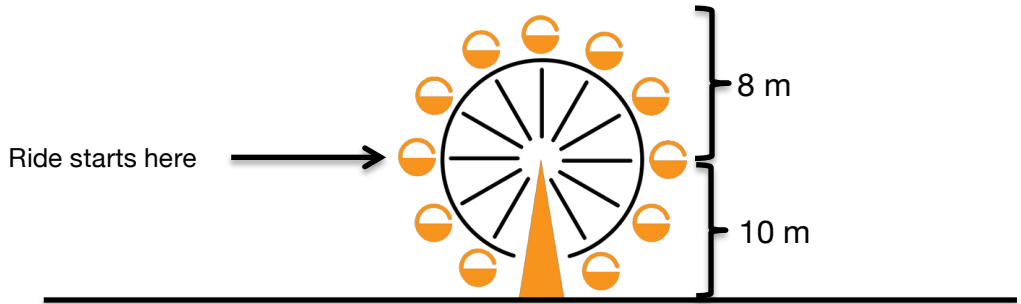
- Equation of Midline =

- Period: _____

Example 1: The sine curve below shows a person’s height above the ground as the person rides a Ferris wheel. Label the **range**, **amplitude**, **midline** and **period**.



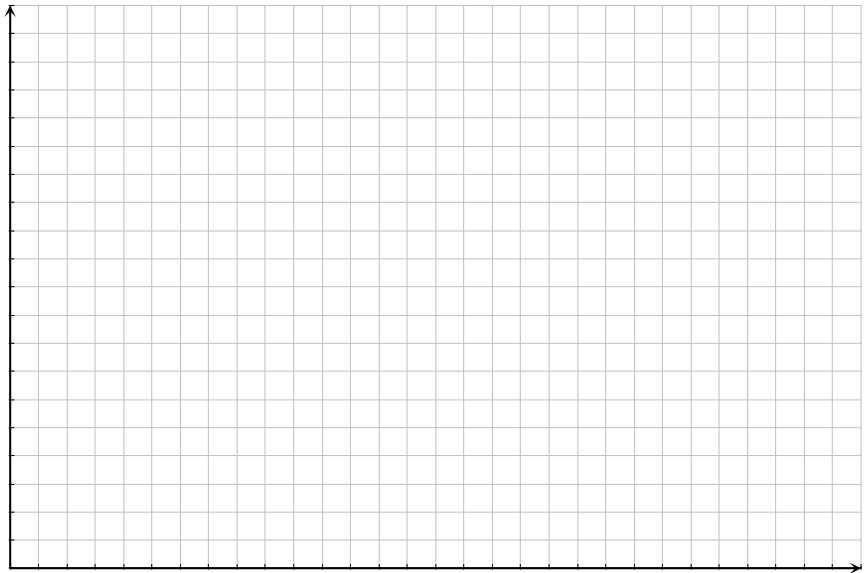
Example 2: The diagram below displays some of the key information about a particular Ferris wheel. One ride last 600 s and completes 10 rotations.



a. Complete the table below to show a rider's height above the ground.

Time on ride (s)	0	15	30	45	60	75	90
Height above the ground (m)							

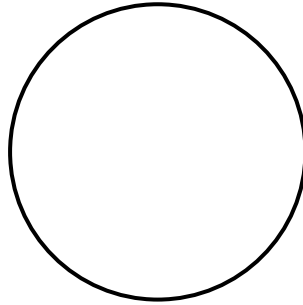
b. Sketch a graph to represent the rider's height above the ground during the ride. Label the **range**, **amplitude**, **midline** and **period**.



c. How is this graph, and Ferris wheel, different from the graph and Ferris wheel in Example 1?

Example 3: The original Ferris wheel, designed by George Ferris in 1893, could carry 2 160 people at a time. It had a maximum height of 80.4 m and a radius of 38 m.

- a. Fill in the table below for the height above the ground of a person on the Ferris wheel. Assume that the person got on the ride at the wheel's lowest point and that one rotation took 16 min.



Time on ride (min)	0	4	8	12	16	20	24
Height above the ground (m)							

- b. Sketch a graph to represent the rider's height above the ground during the ride. Label the **range**, **amplitude**, **midline** and **period**.

