The Ferris Wheel

The height above the ground of a rider on a Ferris wheel can be modelled by $h(x) = 25\sin(x - 90)^\circ + 27$, where $h(x)$ is the height, in metres, and x is the angle, in degrees, the rider has rotated from the boarding position.

Draw a picture of the Ferris Wheel's motion below ,

Now graph on Nspire, adjusting window settings accordingly.

Answer the following questions from your NSpire Graph ….

a) Trace to determine the height of the rider when x = 30° _____

b) Trace to determine the angle when $h(x)$ = 40m _____

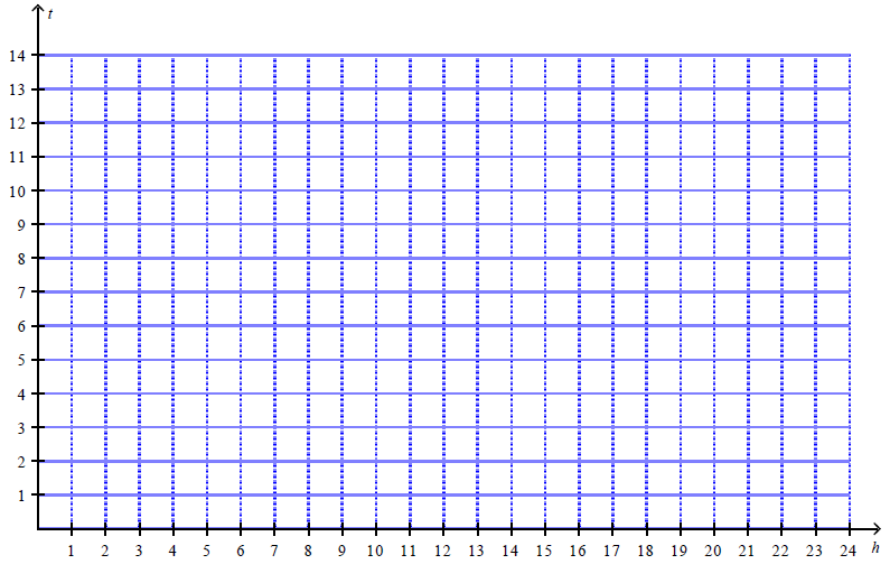
MCR3U ***Applications of Sinusoidal Function***

Tides in the Bay

The depth of water in a bay varies according to the tides. A pole is placed in the water to measure the water's depth. At high tide (midnight) the water at the pole is 12 m deep. At low tide the water at the pole is 2 m deep. Assume the tides run in a 12 hour sinusoidal cycle.

Create a model

Graph the Height vs Time on the graph provided.
Create a sinusoidal model.



a) How deep is the water at the pole at 3:00 am.

b) How deep is the water at the pole at 4:45 pm.

c) At what time during the day will the depth of the water be 10 m?