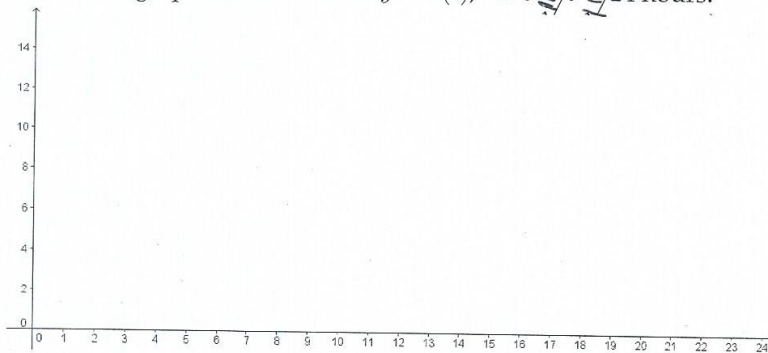


8. [12 points] The predicted times and heights of the high and low tides for the seaside village of Portwenn during a certain day are:

Time of day	Low/High Tide Height (in meters)
00:30	4.8
06:30	14.4
12:30	4.8
18:30	14.4

- (a) Find a sinusoidal function in standard form, $h(t) = A \sin\left(\frac{2\pi}{B}(t - C)\right) + D$, which models the tide height data for Portwenn at t hours past midnight, on the given day.

- (b) Sketch the graph of the function $y = h(t)$, for $0 \leq t \leq 24$ hours.



- (c) A boat requires a tide height of 10 meters or more to be able to enter a harbor. Compute all the time intervals during this day when the boat could enter the Portwenn harbor.