8.F Tides

Alignments to Content Standards: 8.F.B.5

Task

The figure below gives the depth of the water at Montauk Point, New York, for a day in November.

a. How many high tides took place on this day?
b. How many low tides took place on this day?
c. How much time elapsed in between high tides?

IM Commentary

This is a simple task about interpreting the graph of a function in terms of the relationship between quantities that it represents.

This task is adapted from Functions Modeling Change: A Preparation for Calculus, Connally
et al., Wiley 2010.

Edit this solution

Solution

a. On the graph, the high tides occur when the graph is at its highest points. On this particular day, there were two high tides.

b. The low tides occur when the graph is at its lowest points. There were two low tides on this day.

c. To find the amount of time elapsed between high tides, find the distance between the two highest points on the graph. It is about 12 hours.

Comment: The very regular graph here is a simple model for illustration. In fact, high tides are very often at different heights. For example, on March 27, 2012 the two high tides in Montauk bay were at 2.25 feet and 1.74 feet.