Tides and Currents Graphing

**Tide Chart**

Day High Tide Height Sunrise Moon Time % Moon

 /Low Time Feet Sunset Visible

W 12 Low 1:53 AM -0.5 7:10 AM Rise 6:12 AM 3

 12 High 8:24 AM 3.3 4:50 PM Set 4:24 PM

 12 Low 2:48 PM -0.4

 12 High 8:43 PM 2.6

Th 13 Low 2:48 AM -0.5 7:11 AM Rise 7:17 AM 0

 13 High 9:18 AM 3.4 4:50 PM Set 5:29 PM

 13 Low 3:41 PM -0.4

 13 High 9:38 PM 2.7

F 14 Low 3:43 AM -0.6 7:12 AM Rise 8:16 AM 0

 14 High 10:11 AM 3.4 4:50 PM Set 6:39 PM

 14 Low 4:33 PM -0.5

 14 High 10:31 PM 2.7

Sa 15 Low 4:37 AM -0.5 7:12 AM Rise 9:06 AM 3

 15 High 11:03 AM 3.3 4:50 PM Set 7:49 PM

 15 Low 5:23 PM -0.4

 15 High 11:25 PM 2.7

Su 16 Low 5:32 AM -0.4 7:13 AM Rise 9:49 AM 9

 16 High 11:56 AM 3.1 4:51 PM Set 8:58 PM

 16 Low 6:14 PM -0.4

M 17 High 12:19 AM 2.7 7:13 AM Rise 10:27 AM 16

 17 Low 6:28 AM -0.3 4:51 PM Set 10:04 PM

 17 High 12:48 PM 2.9

 17 Low 7:05 PM -0.3

Tu 18 High 1:15 AM 2.6 7:14 AM Rise 11:00 AM 26

 18 Low 7:26 AM -0.1 4:52 PM Set 11:07 PM

 18 High 1:42 PM 2.7

 18 Low 7:56 PM -0.2

W 19 High 2:12 AM 2.5 7:15 AM Rise 11:32 AM 36

 19 Low 8:26 AM 0.1 4:52 PM

 19 High 2:37 PM 2.4

 19 Low 8:48 PM -0.1

**#1)** How many high tides and low tides are there usually per day?

**#2)** How much time is between high tides?

**#3)** Compare the sequence of high and low tides from one week to the next?

**#4)** Predict the tides for Thursday, 12/20. (The first day that is not listed on the tide chart.)

**#5)** Is there a relationship between the percent of the moon visible and the height? Do you think it is a cause and effect relationship?

Graph the following information. The first chart shows data for tide heights of high tide of four different locations during four different months. The second chart shows data for tide heights of low tide of four different locations during four different months. You may graph it as two separate graphs for low tide and high tide. You may choose to do four graphs: one for each month. You could do four graphs: one for each location. If you are confident that you can graph all of the data in one graph and still have it be clear, then by all means go for it. Just remember all graphs should have:

* TAILS🡪 Title, Axis, Increments, Labels on the Axes, Scale (each box counts the same)

Tide height (feet) at high tide

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Chesapeake Bay Bridge Tunnel | Charleston, South Carolina | Portland, Maine | Miami, Florida |
| March | 2.28 | 4.6 | 8.36 | 1.66 |
| June | 3.36 | 6.4 | 11.23 | 2.29 |
| September | 3.49 | 6.29 | 10.68 | 2.82 |
| December | 2.54 | 5.22 | 9.36 | 2.09 |

Tide height (feet) at low tide

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Chesapeake Bay Bridge Tunnel | Charleston, South Carolina | Portland, Maine | Miami, Florida |
| March | .44 | .68 | 1.41 | .12 |
| June | -.11 | -.17 | -.47 | -.45 |
| September | .01 | -.21 | -.55 | .11 |
| December | .05 | .27 | .33 | .06 |

**#6)** Which location had the largest differences between high and low tides?

**#7)** Which location had the smallest differences between high and low tides?

**#8)** Looking at all the locations, which season/month had the largest difference between high and low tides?

**#9)** Looking at all the locations, which season/month had the smallest difference between high and low tides?

**#10)** Can you hypothesize anything about latitude (distance from the equator) and tidal range?

**#11)** Based on your graphs, where do you think the moon is in relation to the sun each month?

**#12)** What other factors besides the gravitational pull of the moon and sun might affect the tides?