The Tides Mini-Lab

Name:_____ **Block:**_____

1.) If the first high tide on this graph occurs at 12 a.m., October 20th, at what time did the second high tide occur? _____Mark this H2 on your graph. Mark each additional high tide as H3, etc.

2.) What is the **time *difference* *between*** one high tide and the next successive **high tide?** _____

3.) Mark each of the low tides as L1, L2, etc. What was the time difference between successive **low tides**?

_____

4.) How many complete tidal cycles are shown on your graph? (From one high tide to the next) _____

5.) Using the graph, **predict the time** of the next high tide (not given): _____ a.m. or p.m (circle)

6.) a. Over the course of this time period, Is the *tidal range* increasing or decreasing on this graph? _____

b. Which moon phase(s) could we be approaching based upon this data? _____

7.) What type of relationship do the tides demonstrate (direct, indirect, cyclic or static)? _____

8.) Explain the difference between **tidal ranges (max-min)** during a spring and neap tide. Your explanation must include information on highs AND lows.

Spring:

Neap:

9.) Which two positions is the moon relative to the Earth and Sun during a **spring tide**? Include the earth, sun, moon in your drawing. Label which phases of the moon these positions represent .

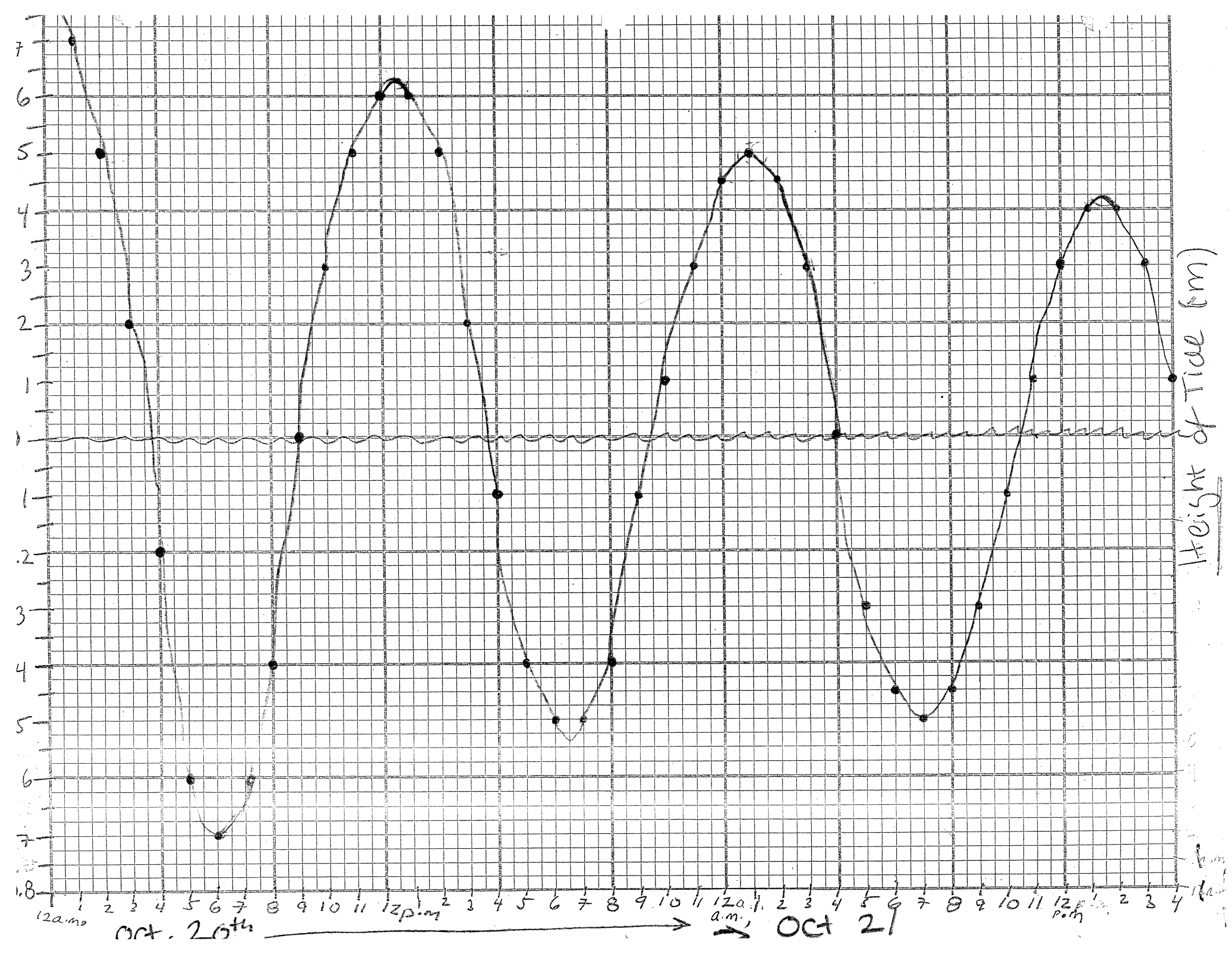
10.) Which two positions is the moon relative to the Earth and Sun during a **Neap tide**? Include the earth, sun, moon in your drawing. Label which phases of the moon these positions represent .

11.) Which type of tide (spring or neap) occurs during both solar and lunar eclipses? _____

12.) Which type of eclipse can only occur during a **full moon**? _____

13.) If the tidal **were to increase**, and the moon were currently in the **waxing gibbous** phase, what phase of the moon would be viewed from earth in ~3 days' time? _____

Conclusion: If the earth takes 24 hours to spin, why aren't high and low tides spaced exactly 12 hours apart? What motion of the moon do we need to account for?


Height of Tide (m)
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
1.8
12a.m.
1 2 3 4 5 6 7 8 9 10 11 12p.m 1 2 3 4 5 6 7 8 9 10 11 12a.m. 1 2 3 4 5 6 7 8 9 10 11 12p.m 1 2 3 4
Oct. 20th
Oct 21