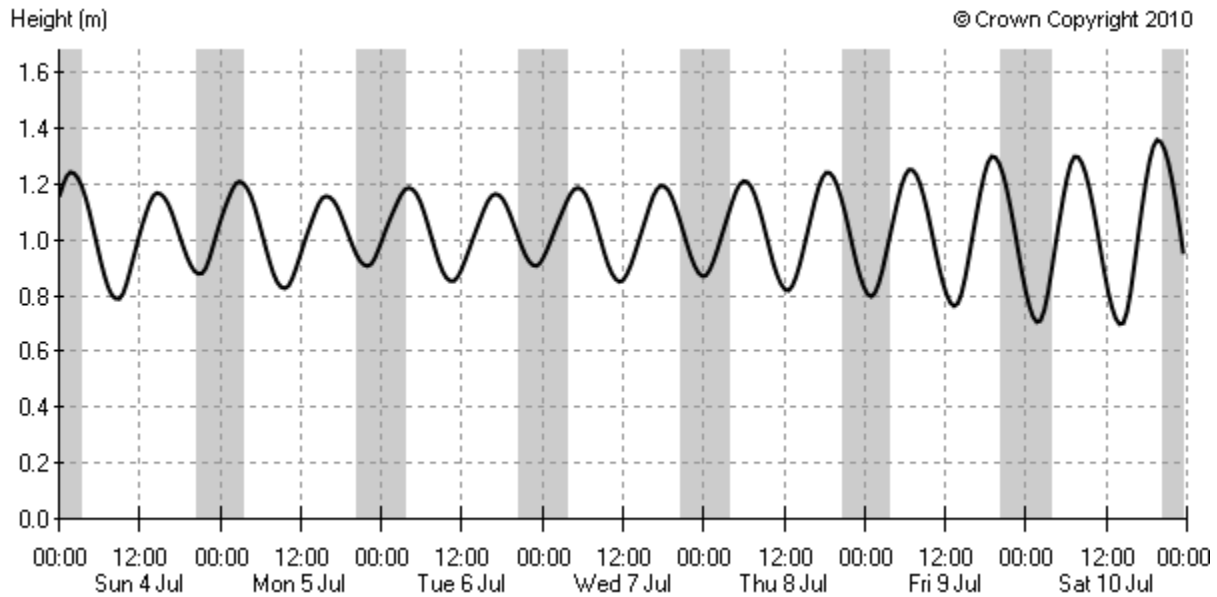


# MiSP Cyclic Phenomena Assessment L3

Name \_\_\_\_\_

Date \_\_\_\_\_

Below is a graph of tide data from a seacoast town in Ireland from July 4 to July 10. The water level (height) is measured in meters. Note that 00:00 is midnight and 12:00 is noon on the  $x$ -axis.



1. Why does the data in the graph above represent an example of a cycle?

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2. What is the highest level (height) of the water reached (to the nearest tenth of a meter) during the seven days graphed?

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3. On what day and date did the lowest level (height) of the water occur?

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4. How many hours are there between the lowest water levels / low tides (heights) on July 7 and 8?

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5. How many hours are there between the first high tide and first low tide on July 8?

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6. In this unit you learned that during the first and last quarter phases in the moon's cycle, the high tides water level is lower and the low tides water level higher (neap tides) than when the moon is full or new (spring tides). Therefore, when (which day— July 4, 5, 6, 7, 8, 9, or 10?) is the moon most likely closest to the last quarter phase?

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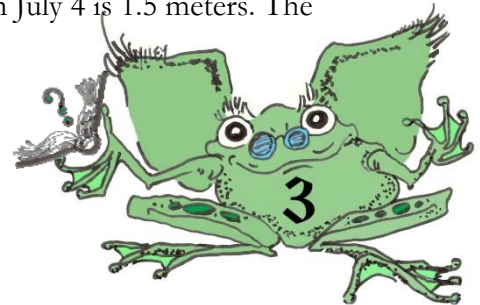
7. If the second high tide is reached at 20:00 (10:00 p.m.) on July 10, predict the time (hour) that the next low tide will be on July 11:

Time (hour) of first low tide on July 11: \_\_\_\_\_

8a. Look back at the graph. Circle two (2) places when the unit rate of change (slope) is positive/+.

8b. *Complete the sentence by circling the correct word:* When the unit rate of change on a graph of water levels (tides) over a period of days is positive, then as time progresses, the level of the water (height) **increases** / **decreases**. (*circle one*)

9. The  $y$ -intercept of the best-fit line between the first high and low tides on July 4 is 1.5 meters. The unit rate of change is -0.1 meters/hour.



What is the equation for the best-fit line from the first high and low tides on July 4?

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10. Using the equation above, what would be the calculated level of water at 3:00 a.m.? Show your work.

