

Worksheet 2: Student Version for Lessons:

- When Tsunamis Strike
- Wave Detection

1. Will a tsunami always cause the water to recede first as it reaches shore? Why or why not?

2. The term describing how far a tsunami reaches horizontally inland is _____.

3. The term for how high on the shore a tsunami reaches is _____.

4. List two reasons a coastal area is not yet safe once a tsunami wave has reached its maximum distance inland.

5. Would a tsunami wave be good for surfing? Why or why not?

6. True or False. Feeling a strong earthquake near the coast is not enough to be concerned about a potential tsunami. Why or why not?

7. What type of instruments help scientists measure changes in water heights, including tides, near a coast?

8. In the open ocean, sea level is measured based on what physical quantity? Hint: this quantity is a measure of force divided by area. _____

9. As you dive down deeper into the ocean, how does the water pressure pushing on you change?

10. Which of the following statements are true? (Please check the correct answers.)

_____ a. Tide changes occur over longer time periods than sea level changes associated with tsunamis.

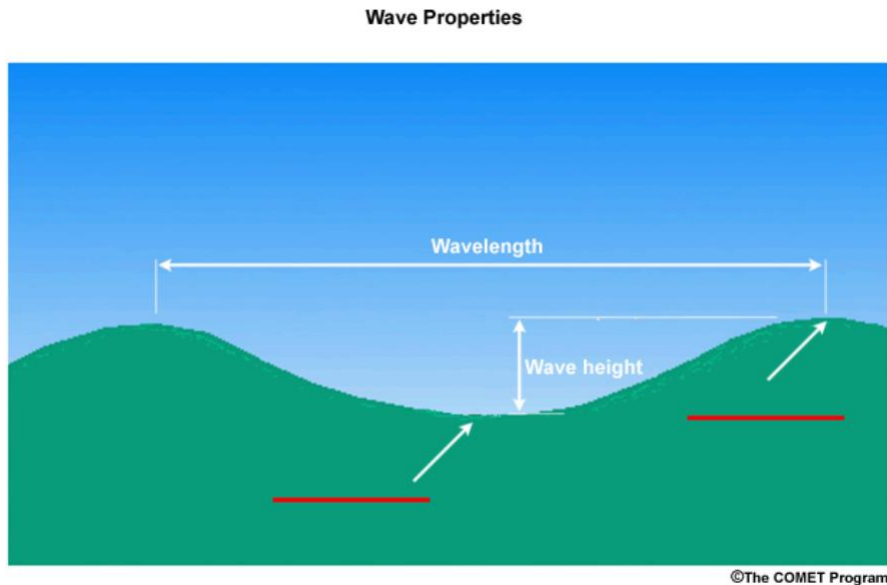
_____ b. Tides and tsunamis have the same cause.

_____ c. Tsunamis are huge tidal waves.

_____ d. Tide changes occur over shorter time periods than sea level changes associated with tsunamis.

_____ e. Sea level gauges measure changes from both tides and tsunamis.

11. Fill in the missing wave component labels shown in this diagram.

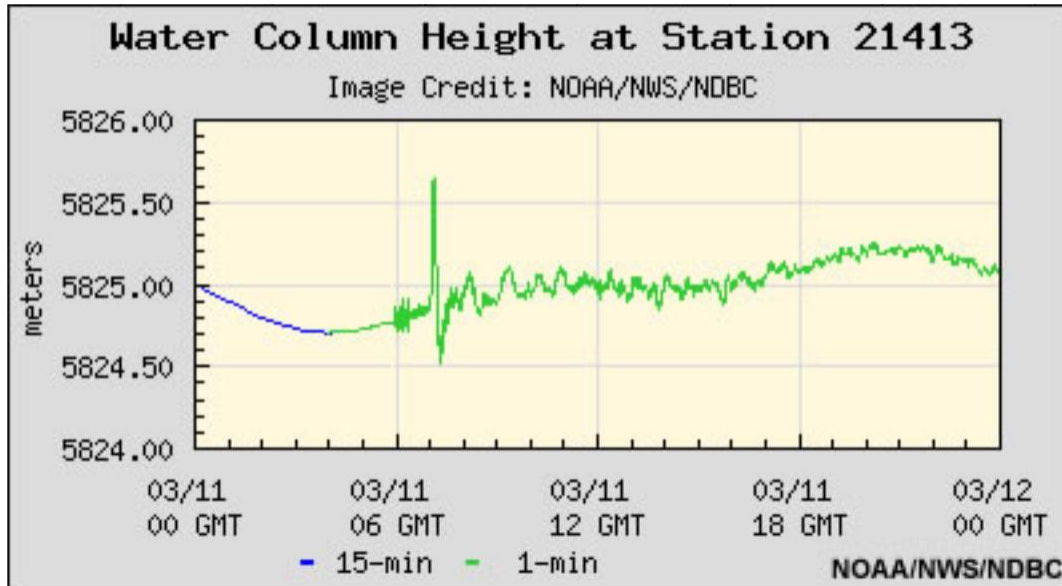


12. Name two types of instruments that can measure wave heights in the deep ocean.

13. What happens to the pressure recorded as a wave crest passes over a sensor on the ocean bottom?

14. What happens to the pressure recorded as a wave trough passes over a sensor on the ocean bottom?

15. What is the maximum wave height of the tsunami, as measured outside of the normal tide signal, at this buoy southwest of the coast of Japan? (Use the graph to estimate the wave height, and select the correct answer below.)



- ☐ a. 0.5 meters
- ☐ b. 0.7 meters
- ☐ c. 1.0 meter
- ☐ d. 1.2 meters