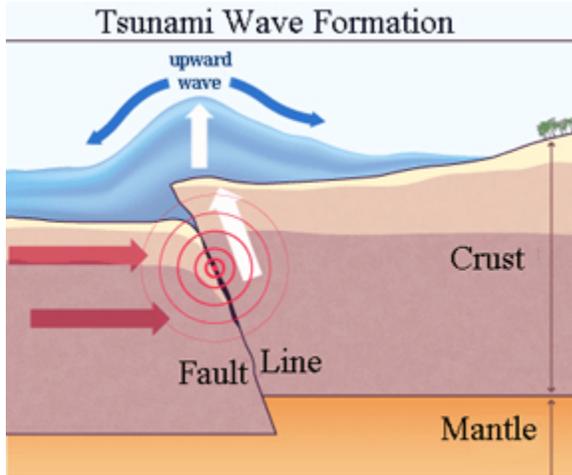
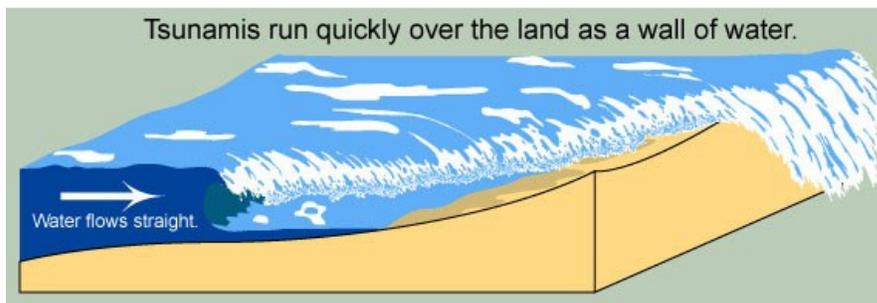
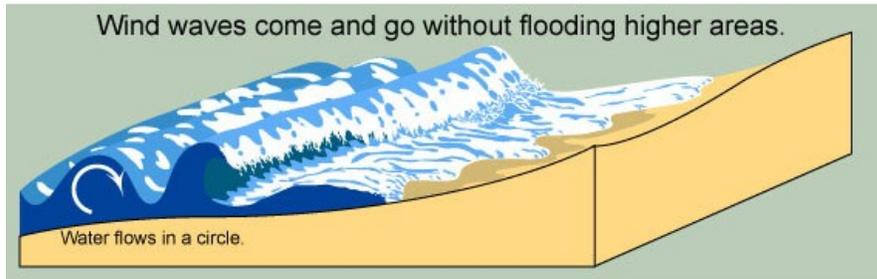


2009 Tsunami

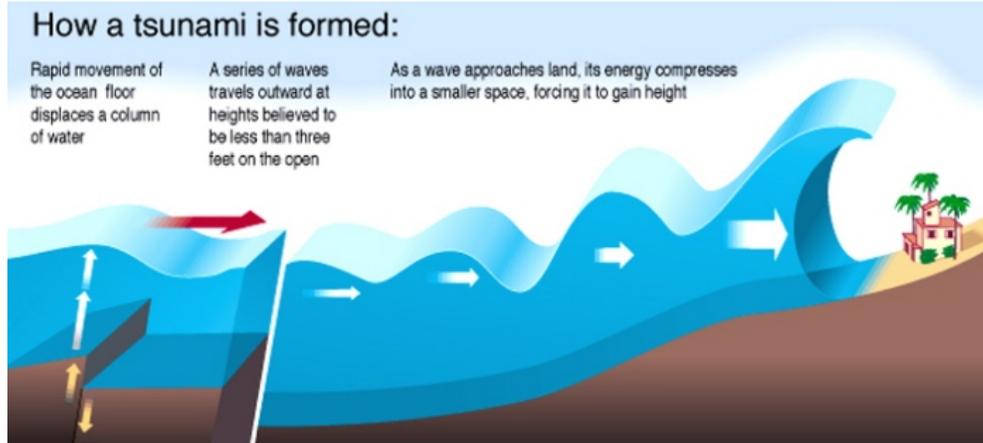


Tsunamis are often no taller than normal wind waves, but they are much more dangerous.



Even a tsunami that looks small can be dangerous!

Any time you feel a large earthquake, or see a disturbance in the ocean that might be a tsunami, head to high ground or inland.



Wind-generated waves usually have period (time between two successional waves) of **five to twenty** seconds and a wavelength (distance between two successional waves) of about **100 to 200** meters (300 to 600 ft). A tsunami can have a period in the range of **ten minutes (600 seconds) to two hours (7200 seconds)** and a wavelength in excess of 300 miles (500 km). It is because of their long wavelengths that tsunamis behave as shallow-water waves. A wave is characterized as a shallow-water wave when the ratio between the water depth and its wavelength gets very small. The speed of a shallow-water wave is equal to the square root of the product of the acceleration of gravity (32ft/sec/sec or 980cm/sec/sec) and the depth of the water. The rate at which a wave loses its energy is inversely related to its wavelength. Since a tsunami has a very large wave length, it will lose little energy as it propagates. Hence in very deep water, a tsunami will travel at high speeds and travel great transoceanic distances with limited energy loss. For example, when the ocean is 20,000 feet (6100 m) deep, unnoticed tsunami travel about 550 miles per hour (890 km/hr), the speed of a jet airplane. And they can move from one side of the Pacific Ocean to the other side in less than one day.

(<http://wcatwc.arh.noaa.gov/physics.htm>)

QUESTIONS:

| WAVE | Period | Frequency | Wavelength meters | Speed meters/second | MPH ^A |
|--------------|--------|-----------|-------------------|---------------------|------------------|
| 5sec wave | | | 100m | | |
| 20sec wave | | | 200m | | |
| 600sec wave | | | 435km | | |
| 7200sec wave | | | 687km | | |

On a separate sheet of paper explain how a Tsunami is formed?

^Aconversion = 1m/s * 2.2 MPH