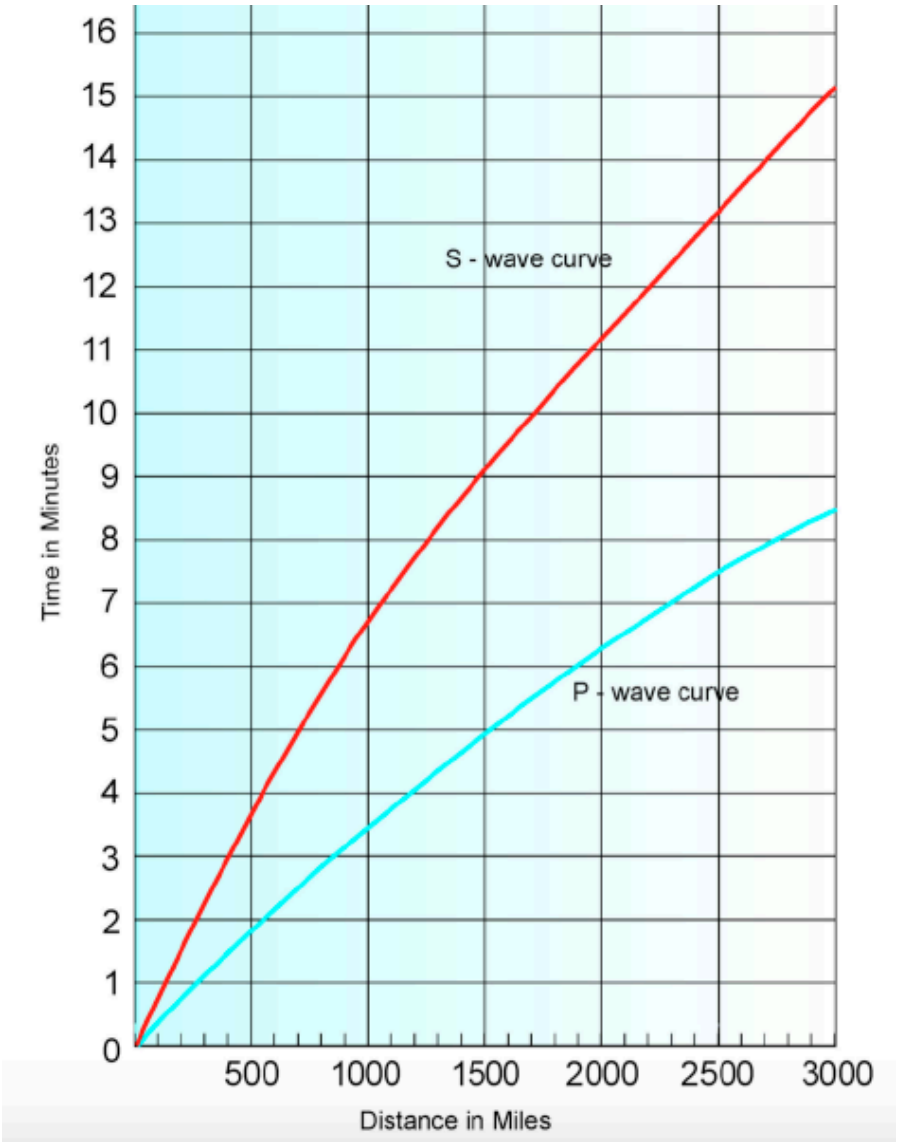
Earthquakes: Finding the Epicenter and Magnitude

This graph shows the amount of time it takes P-waves and S-waves to arrive based on the distance from the epicenter of an earthquake.



1. If a seismometer station is 1500 miles from the epicenter, then:

a) How much time will it take the P-waves to arrive?

b) How much time will it take the S-waves to arrive?

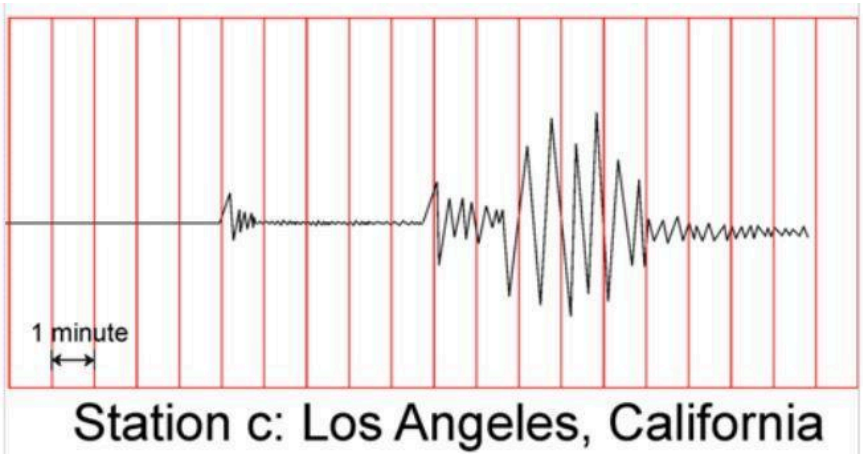
c) What is the S-P Interval (Δt ?

2. If the S-P interval is 3 minutes, then how far is the station from the epicenter?

3. a) Find the S-P intervals (Δt) for each seismograph provided below.

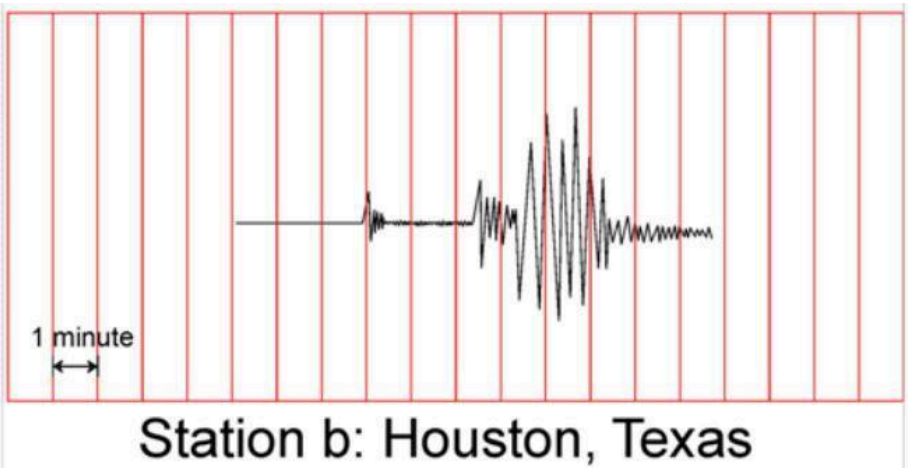
S-P Interval:

Distance from Epicenter:



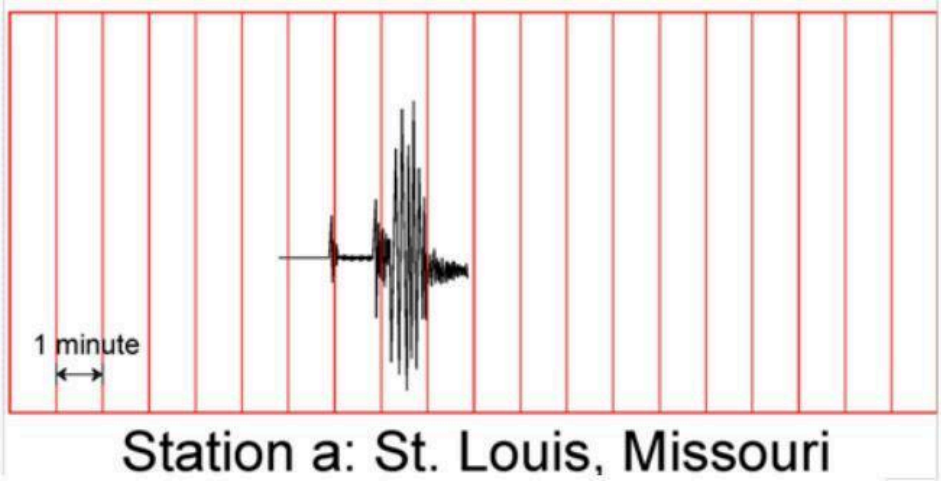
S-P Interval:

Distance from Epicenter:



S-P Interval:

Distance from Epicenter:



b) Use the S-P intervals (and Distance-Time graph on page 1) to find out how far each seismograph is from the epicenter.

Los Angeles: Houston: St.Louis:

a) For each station, use a compass (and the distance scale provided) to draw a circle that represents all the places the epicenter could be in relation to that station. The radius will be the distance you found in Part 2, b). <u>The point where the circles intersect is the epicenter of the earthquake!</u> What city was it close to?