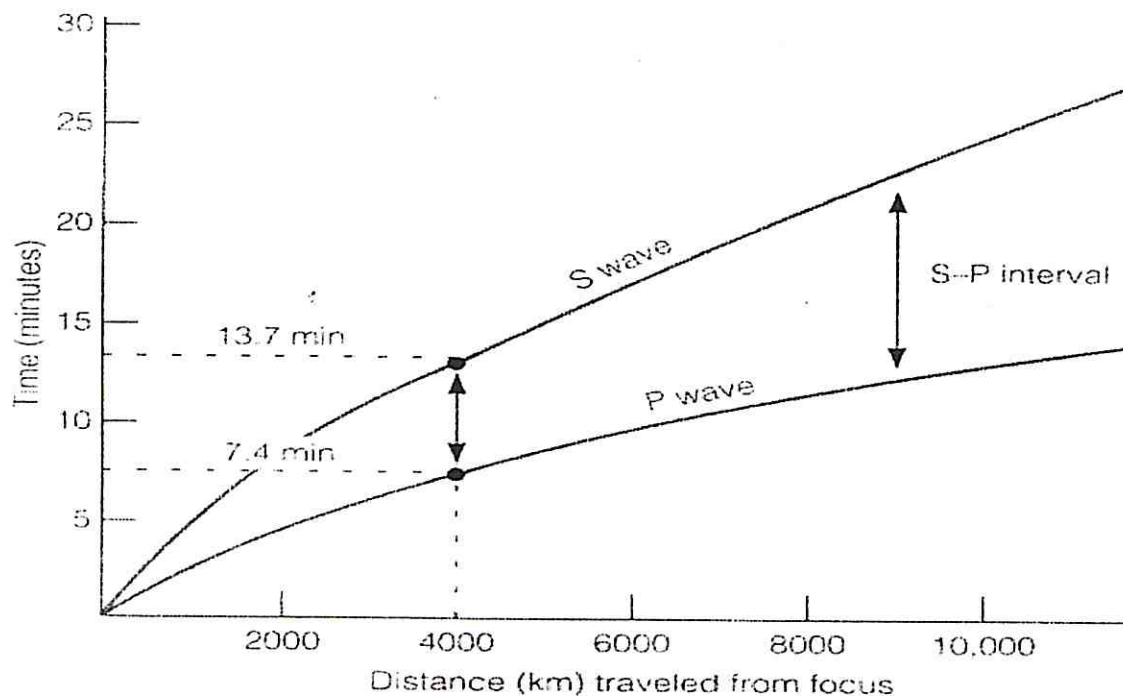


Questions (Answer using complete sentences on a separate piece of paper)

All earthquakes send out waves like the P and S waves send out from the Washington quake. These waves arrive in cities all around the world. If you graph the waves from any typical earthquake, your graph will have the same shape as the graph you saw from the Washington quake.

1. Which waves always seem to arrive first?

Use the following chart to answer questions 2-5



2. When are S waves far behind P waves-- When they arrive at a city close to an earthquake or a city far from an earthquake?

3. Suppose you have seismograph 2000 kilometers away from the earthquake epicenter.

a. How many minutes after the quake occurs will the P waves reach your seismograph?

b. How many minutes after the quake occurs will the S waves reach your seismograph?

c. Which waves will reach you earlier? How many minutes earlier?

4. How many minutes apart will the P waves and S waves arrive for an earthquake this is ...

a. 5000 km away from your seismograph?

b. 8000 km away from your seismograph?

5. Now suppose your seismograph suddenly begins recording some P waves. Then exactly 4 minutes later it begins recording some S waves. How far are you from the epicenter of the quake? Explain how you found your answer.