

p wave velocity 7 km/s  
 s wave velocity 5 km/s  
 Surface wave 3.5 km/s

## Homework #2 questions 1-4

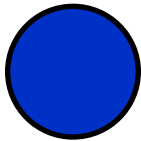
● WARM 70.0s

A large earthquake has occurred in western north America. The four seismograms below right were recorded by seismometers at towns Warm, Dust, Hott and Cold. □

The seismograms are aligned with their p wave arrivals coincident with the zero of the time scale, but their actual arrival times in seconds past 3 A.M. are indicated at each named city.

- Where is the epicenter? a b c d e
- When did the earthquake occur? a. 03:02:00 b 03:02:50  
 c 03:00:10.0 d 03:00:20.0 e. 03:00:40.0 in the morning
- How long does it take for the surface waves □ to travel from the epicenter to the Nuclear Waste Repository?  
 a. 129 s b 229 s c 292 s d 7 minutes e. 3 minutes
- If it takes 20 seconds to calculate the epicenter after the HOTT seismometer has registered the earthquake, how many minutes do the NRC operators have to shut the repository doors. a.1.3 b 2.6 c 3.9 d 4.3 e 5.3 minutes

velocity=distance/time. In your notes you will find an expression relating p-s travel time at a seismometer to the epicentral distance and the velocities of seismic waves.



Nevada Nuclear  
 Waste Repository

a

● DUST 34.3s

c

d

b

e

● COLD 41.4s

HOTT 62.8s ●

