Homework Assignment

Seismic Surveying
(Problems taken from Computational Engineering Geology, by E. Derrinsh, 1998)

Due Wednesday February 28, 2007

1. When one face of a slab is struck with a hammer, a detector at the opposite face 0.85 m away receives waves 230 \( \mu \)s and 425 \( \mu \)s later. Find the speeds of (a) the S waves, (b) the P waves in this rock.

2. Explorers are conducting a seismic reflection survey in a region in which a horizontal interface between two rock types is known to exist at some depth \( h \). A geophone 186 m from the shot point receives P waves 62.0 ms and 87.7 ms after detonation. Find the depth to the interface.

3. A seismic survey yields the results shown below. Travel times are in ms and distances in meters. Find the depth to the horizontal interface.

4. A seismic refraction survey results in data fitting the lines shown on the graph below. Find the depth to the horizontal interface.