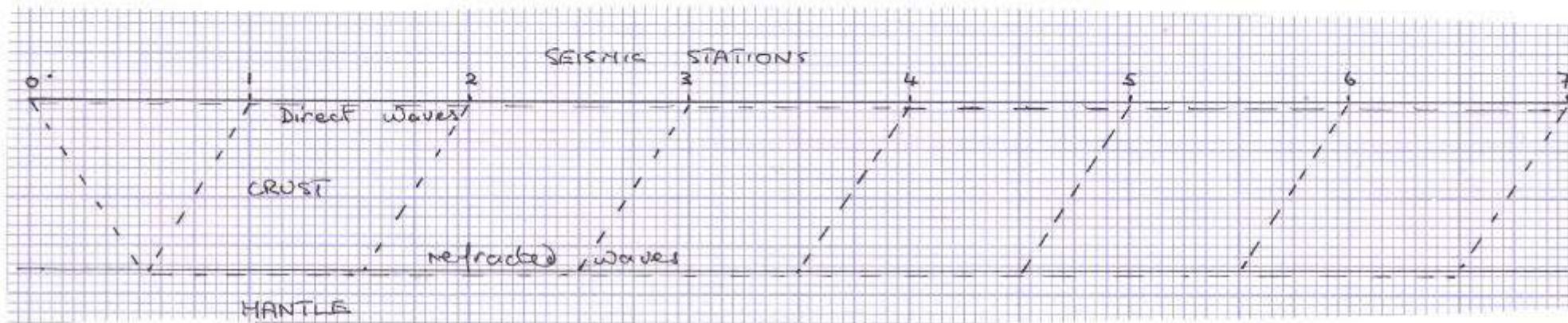


## THE MOHO DISCONTINUITY

The diagram below shows the paths of seismic waves as they go through the crust and mantle. The waves travel at 6.0 km per sec through the crust and at 8.0 km per sec through the mantle. There are two paths for the waves to take, either directly through the crust or going down to the mantle and travelling through the mantle and up to the recording station. Vertical and horizontal scale of diagram 1cm = 10 km.



- 1 Measure the distance and work out the time of arrival for the waves travelling directly to the seismographs through the crust only.
- 2 Now measure the distance and work out the time ( $t_1$ ) for the refracted waves to travel down to the mantle and back to the surface. Work out the time ( $t_1 + t_2$ ) for the refracted waves to reach each of the stations.
- 3 Plot a graph of the time of arrival of both direct and indirect waves. Time on the x axis and station on the y axis
- 4 Plot a seismogram for three stations.

The scale of the graph above may change during down loading and photocopying. The large squares on the graph paper should be 2cm.

Complete this table

station	1	2	3	4	5	6	7
direct distance through crust in km	40	80					
<b>direct time through crust in secs</b>	<b>6.7</b>	<b>13.4</b>					
refracted distance through crust in km	80	80					
refracted time through crust (t1) in secs	13.4	13.4					
distance through mantle in km	0	40					
time through mantle(t2) in secs	0	5					
<b>total time for refracted wave = t1 + t2 in secs</b>	<b>13.4</b>	<b>18.4</b>					