

# Where was the earthquake?

**This task is about calculating and plotting data to find the epicentre of an earthquake.**

An earthquake struck central New Zealand at about 11:23 a.m. yesterday morning. The time difference between the arrival of the P and S waves can be used to find the epicentre of this earthquake.

	Relationship between time difference and distance							
Time between P and S waves (seconds)	12	15	18	22	26	30	35	37
Distance (km)	100	120	150	175	200	270	325	350

- a) Use this information to complete the table below which shows data collected from seismographs in three different cities.

Location	Arrival time of waves		Time difference (s)	Distance (km)
	P wave (h:m:s)	S wave (h:m:s)		
Wellington	11:23:27	11:23:45		
Westport	11:23:30	11:23:52		
Napier	11:23:52	11:24:27		

- b) Use the distances you calculated, and the scale, to show where the epicentre of the earthquake was located. Use a compass to find this point and mark on the map with an X.



