Where was the earthquake?

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

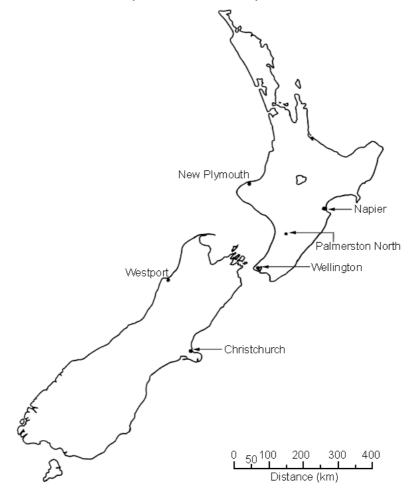
An earthquake struck central New Zealand at about 11:23 a.m. yesterday morning. The time difference between the arrival of the P and S waves can be used to find the epicentre of this earthquake.

	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 tim	e of waves	Time difference (s)	Distance (km)	
Location	P wave (h:m:s)	S wave (h:m:s)	rime difference (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.



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