Magnetic patterns: ocean floor pattern plotting

The Table below contains information collected by geologists in an area south west of Iceland. A magnetometer aboard an aircraft was used to measure the strength of the Earth's magnetic field at different places on the Earth's surface. A magnetometer above reversely magnetised rock shows the field to be weaker than when it is over normally magnetised rock.

On the map of Iceland, mark an X or an O at the location of each station listed in the table. X indicates reversed magnetisation and O indicates normal magnetisation. Where the age of the rock is given, write this next to the symbol. Station 2 has already been plotted for you on the map.

After you have marked off all the normal and reversed symbols and the ages that are given for some locations, draw a straight line to connect all the stations where the rocks are of present age.

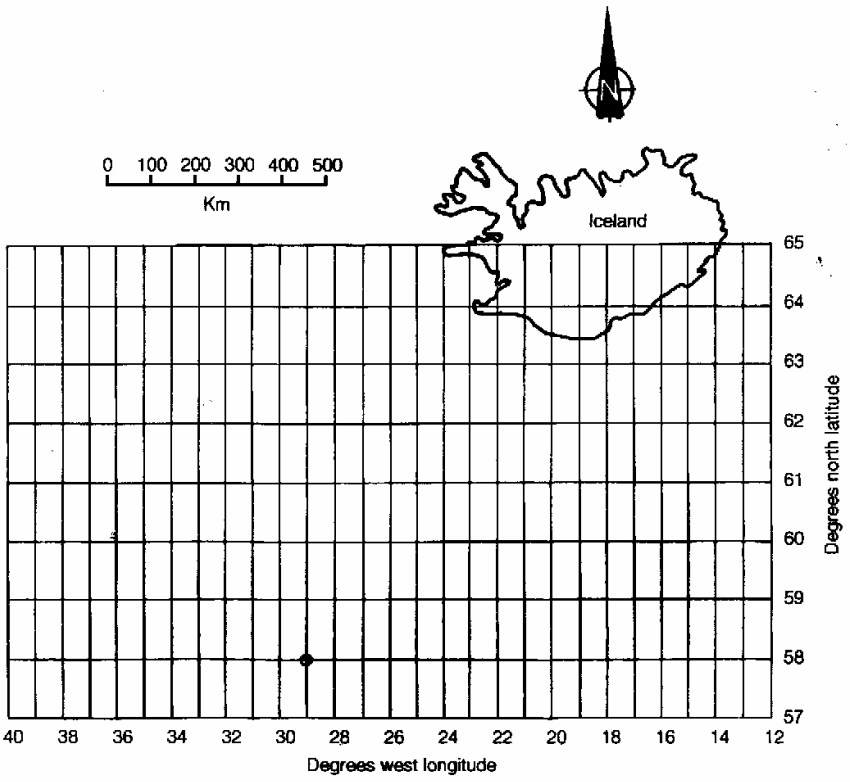
Draw one straight line through each group of rocks that is 10 million years old.

Mark on the location of the oceanic ridge, which is the area where the crust is being pulled part.

Suggest how this pattern might have developed.

MAGNETIC PATTERN EXERCISE

Station	North Latitude	West Longitude	Magnetic Field Orientation	Symbol	Age (Ma = million years)
1	58.0°	28.0°	Reversed	X	
2	58.0°	29.0°	Normal	O	10 Ma
3	58.5°	29.5°	Reversed	X	
4	58.5°	31.0°	Normal	O	Present
5	59.0°	31.5°	Reversed	X	
6	60.0°	32.0°	Normal	O	10 Ma
7	61.0°	33.0°	Reversed	X	
8	60.5°	31.0°	Normal	O	10 Ma
9	60.0°	30.0°	Reversed	X	
10	60.0°	29.0°	Normal	O	Present
11	59.5°	28.5°	Reversed	X	
12	59.0°	27.5°	Normal	O	10 Ma
13	58.5°	26.0°	Reversed	X	
14	59.0°	25.0°	Reversed	X	
15	60.0°	24.0°	Reversed	X	
16	61.0°	24.5°	Normal	O	10 Ma
17	61.0°	25.5°	Reversed	X	
18	61.5°	26.0°	Reversed	X	
19	61.5°	26.5°	Normal	O	Present
20	62.0°	27.5°	Reversed	X	
21	62.0°	28.5°	Reversed	X	
22	62.0°	29.0°	Normal	O	10 Ma
23	62.5°	30.5°	Reversed	X	



Note: The data has been greatly simplified for this exercise. In real surveys magnetic data is collected continuously and plotted on graphs which show peaks and troughs of magnetic intensity. Peaks correspond to normal magnetisation and troughs to reversed magnetisation.