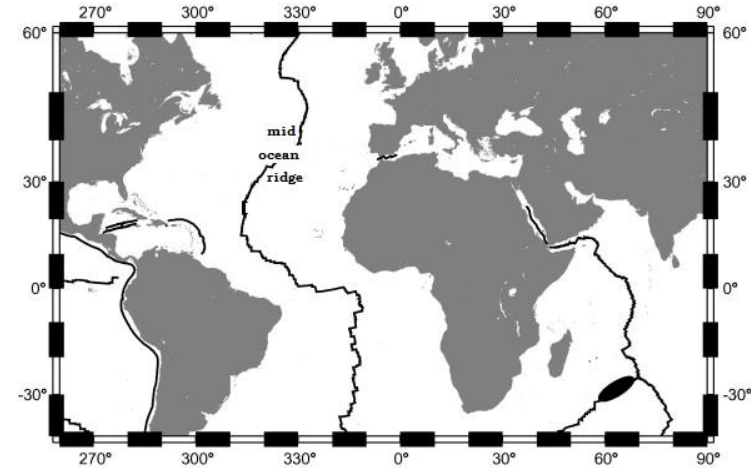


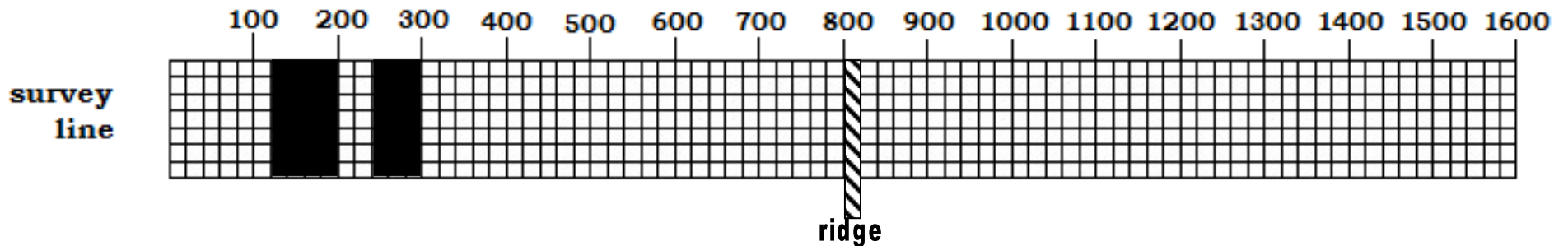
The survey ship “Tectonica” took magnetic readings as it crossed the Atlantic Ocean. From 0 km until 120 km, the rocks in the ocean had a reversed magnetism. (The North pole must have actually been in the south of the planet when those rocks cooled.) Then from the 120 km mile mark until the 200 mile mark the magnetism in the rocks were normal (The magnetic grains of the iron lined up toward the North pole) This flip-flopping of the magnetism in rocks continued during the entire 1600 km journey across the ocean.

distance	Magnetic survey line	Age of rock in years
0 km	reversed	20 million
120 km	normal	
200 km	reversed	
240 km	normal	
300 km	reversed	
400 km	normal	
440 km	reversed	
560 km	normal	
620 km	reversed	
640 km	normal	
800 km	RIDGE	0 years

distance	Magnetic survey line	Age of rock in years
820 km	normal	
980 km	reversed	
1000 km	normal	
1060 km	reversed	
1180 km	normal	
1220 km	reversed	
1320 km	normal	
1380 km	reversed	
1420 km	normal	
1500 km	reversed	
1600 km	End of line	20 million

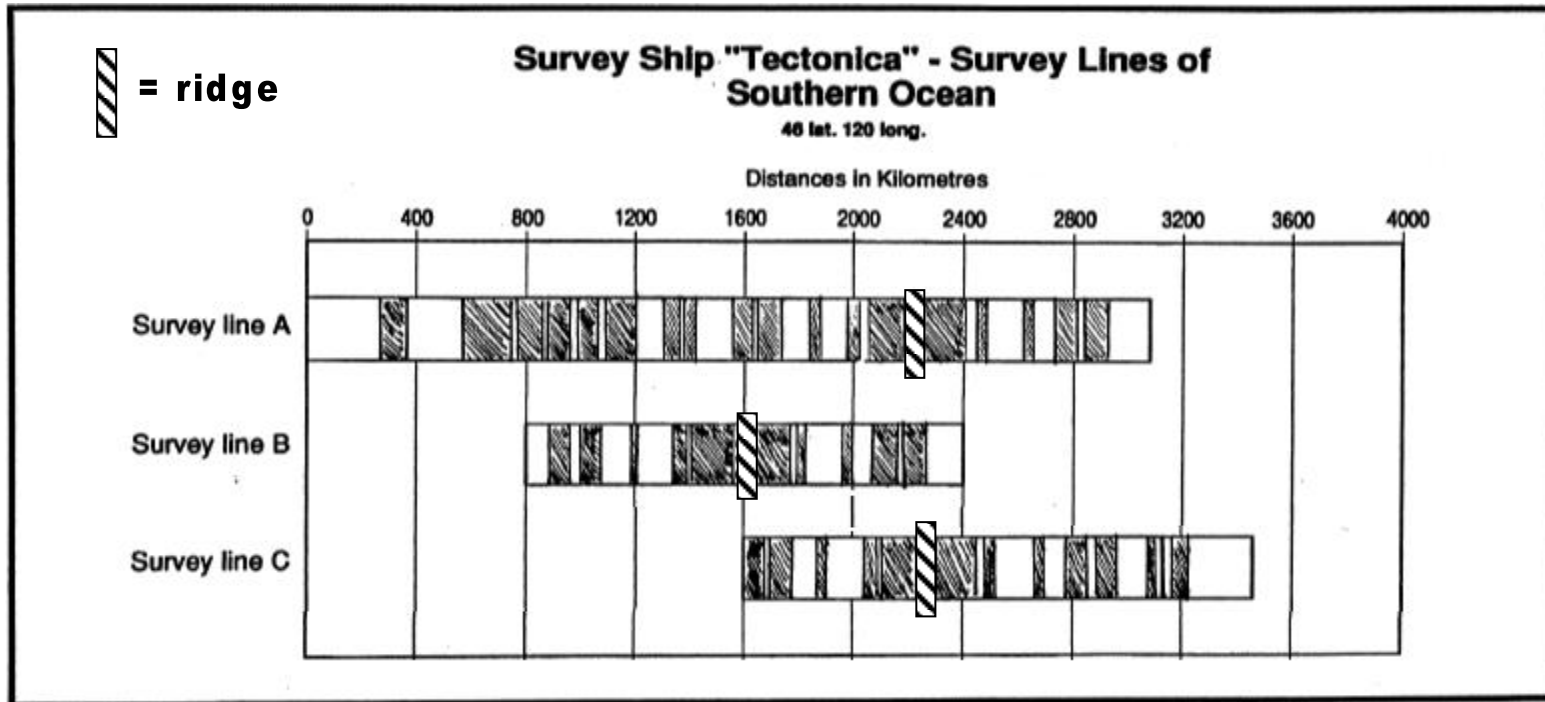


Plot the bars representing the magnetic rocks on the graph below. Shade the normal bars dark, and leave the reversed bars unshaded. When you get to the place marked “ridge” note that this is the Mid-ocean ridge where fresh magma is filling in the crack. Label this bar “RIDGE.” Since it is brand new rock, it is labeled 0 years old. The first four plots (through 300km) have been done for you.



1. Find the stripe that represents the polar reversal that occurred 20 million years ago. How far is this from the volcanic ridge in km?
2. How far does the ocean floor move from the ridge every year? (show your calculations)

The survey ship Tectonica made 3 additional trips across sections of the ocean. After plotting the survey lines, this is what the graphs looked like:



3. What observation can you make about the position of the ridge in survey B compared to survey A and C?

4. How far away is the ridge in Survey B from the ridge in survey A? (horizontally speaking)

5. What geological structure might occur between survey A and survey B to offset this mid ocean ridge?

