Continental Drift – SG #4

Read p. 217 and answer the following questions:

1. Who was Alfred Wegener?
   _____A German scientist who wanted to know if Earth's continents were in fixed positions
2. What did he propose?
   ____all continents were once part of a supercontinent called Pangaea
3. Over time, what happened to Pangaea?
   it broke apart and the continents slowly moved to their present position

4. Define Wegener's theory of Continental Drift:
   _____The continents are in constant motion on the surface of the Earth
5. What did he notice about the coastlines of Africa and South America?
   _____the similarities of the coastlines now separated by oceans (see picture)___

Read p. 218 and answer the following questions:

6. What was the most obvious evidence for continental drift? ___the continents appear to fit together like a puzzle
7. What did Wegener need to help prove his theory? _____EVIDENCE!
8. Read Climate Clues
   a. Explain what finding glacier grooves helped to prove.
      _____Grooves showed that the current positions of S Am/Africa/India/Australia are too warm to have glaciers; so these landmasses must have been located near the South pole, where it was colder and glaciers could form
   b. Where did Wegener think that South America, Africa, India, and Australia were once located 280 myo? ____closer to Antarctica
   c. What did he propose about the climate of the Southern Hemisphere? _____much cooler than today_____
   d. What did he believe covered these areas? _____glaciers (ice sheets)
      _____
9. Read Fossil Clues
   a. How did Wegener believe it was possible that fossils of similar organisms were found on continents separated by oceans? _____the landmasses must have been connected at one time
   b. Example from the book: ____glossopteris_____ - a fern like plant (also could be evidence for climate since found in colder climates, but needed a wetter, warmer climate to grow)
   c. *Examples not from the book ___mesosaurus (reptile)_____ & _____lystrosaurus (herbivore)_____ ( these small animals would NOT have survive a journey across an ocean)

10. Read Rock Clues (sometimes known as land features) (p. 220)
    a. What did Wegener notice about mountain ranges and rock formations on different continents? _____they had common origins _
    b. What is known about the volcanic rocks found in both Africa and South America? ____there was a large-scale volcanic eruption that occurred at roughly the same time; the rocks are identical in both chemistry (composition) and age
    c. What is known about the Caledonian Mt Range in northern Europe and the Appalachian Mt Range in eastern North American? _____also similar in age and structure (composition); have the same rock type; mountains could make one long, continuous mountain belt

Read p. 221 and answer the following questions:

11. When were Wegener's ideas widely accepted? _____4 decades after his death (1970)__
12. What could Wegener NOT explain during his lifetime? _____how the continents could move _(the force that moved them) ___
13. Where was the evidence he needed hidden? _____on the seafloor_____

Read p. 223 and answer the following questions:

14. 120 million years ago, how many landmasses existed? __2_____
15. Called? ____Laurasia_____ &_____Gondwanaland_____
16. What was recently found in Antarctica? _____fossilized tooth of a small land mammal _____
17. Where do scientists believe that fossil's relatives live today? __Madagascar_____
18. What now separates these landmasses? _____ocean_____
19. This is another proof for _____fossil evidence_____. (#9)