What is Climate?

Use pages 68-74 of the red Weather and Climate textbook to complete the worksheet below.

1. What is the difference between weather and climate?
2. What two main factors help to determine climate?
3. The reason climates can be so different is because there are **four** main factors that make climates unique. They are:

b.

c.

d.

1. The horizontal lines that circle the globe are called lines of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. These lines measure the distance \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ of the equator in degrees.
3. The line that is labeled 0 degrees latitude is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. You would expect the temperature here to be \_\_\_\_\_\_\_\_\_\_.
5. The line that is labeled 90 degrees North latitude is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. You would expect the temperature here to be \_\_\_\_\_\_\_\_\_\_.
7. The Earth’s surface receives the most amount of direct solar energy at the \_\_\_\_\_\_\_\_\_\_\_.
8. The solar energy gets spread out over a larger surface and results in lower temperatures at the \_\_\_\_\_\_\_\_\_\_\_\_\_.
9. We see a significant difference in temperatures and weather from one season to another because we live far from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ where the temperatures are about the same all year-round.
10. Our summers here in the Northern Hemisphere are warmer because we have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ days and more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ solar energy.
11. In the summer, our Northern Hemisphere is tilted \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the sun.
12. Our winters are colder because we have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ days and less \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ solar energy.
13. In the winter, our Northern Hemisphere is tilted \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the sun.
14. While we are having summer here in the Northern Hemisphere, the people who live in the Southern Hemisphere are having their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
15. For us, it is fall right now. So, the Southern Hemisphere would be having \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ right now.
16. Prevailing winds affect both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
17. You are more likely to have precipitation when the air is ***cooling/heating***. *Circle one.*
18. Warm air can hold ***more/less*** water vapor than cool air. *Circle one.*
19. Winds that travel over large bodies of water will have ***more/less*** moisture than winds that travel over land. *Circle one.*
20. Temperatures at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are lower because the air is less dense and not able to absorb and hold thermal energy.
21. When air rises up a mountain, it cools off. This drop in temperature causes moisture to be released in the form of \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_.
22. The sinking air on the other side of the mountain is gaining heat and moisture, so it does not rain. This produces a desert on the side of the mountain that is in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
23. Because water has the ability to absorb and release thermal energy, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are able to carry warm or cool water to different locations.
24. These warm or cool currents affect the temperature of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ above.
25. Explain why Iceland is warmer than Greenland, even though they are both just below the Arctic Circle.

Label the major climate zones in the figure below:



Label each line of latitude with the degrees as you see on page 74 in the book.

Use color to indicate the zones that are hottest, coldest and moderate. Color the hottest zones red, the coldest zones blue, and the moderate zones green.

Which zone (labeled above) do we call home?