Name: _____ Regents Earth Science

Date: _____ Period: _____

Lab # 37 Weather Symbols and Maps

Background:

In the United States, weather generally moves from west to east in bands called fronts. Temperature and moisture conditions are usually very different on opposite sides of the front. Cold fronts move on the average of 32 km/hour, and warm fronts move on average 24 km/hours. Stationary or static fronts generally do not move much at all. Warm air generally forms a low pressure area, and cool air generally forms a high pressure area. Scientists observe and study the movements of these fronts, air pressure areas, and their characteristics in an effort to predict weather conditions. In this investigation, you will interpret weather maps and identify weather patterns.

A. Examine the map in Figure 1 (Use ESRT p. 13 to complete):

1. Draw the symbols for each of the following according to the keys on the map on the next page. Look at both the ESRT and Figure 1. Are some of the symbols different? _____ Which symbols are different?

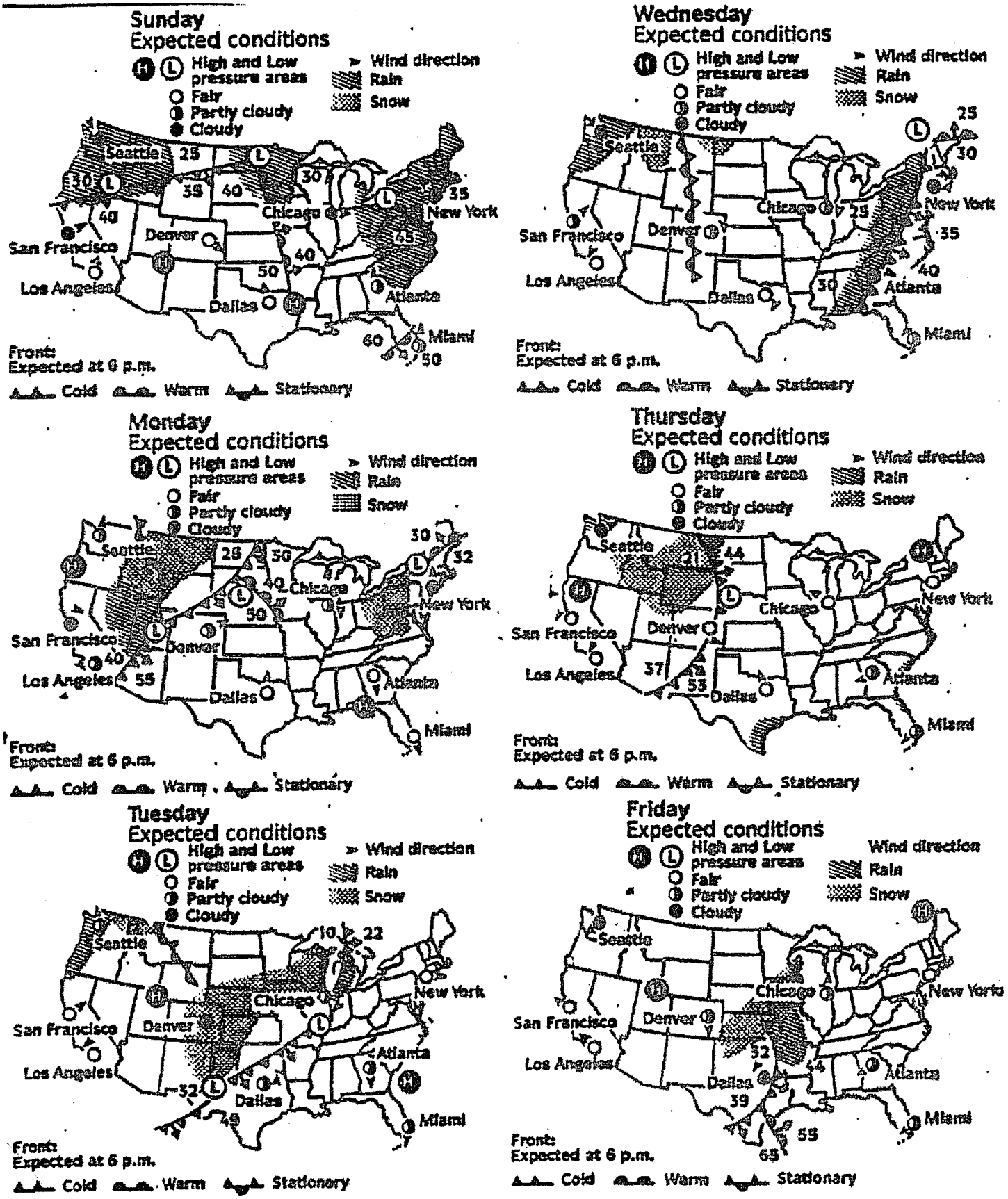
_____

_____

2. Draw both symbols from the map and from the ESRT, if they are different.

a. rain	b. cold front	c. cloudy sky
d. warm front	e. snow	f. partly cloudy sky
g. fair sky	h. stationary front	i. high pressure area

Figure 1: Weather Maps Showing Progression of Fronts



B. Use Figure 1 to answer the questions below. Study all the maps in Fig. 1 before you begin.

1. Note the cold front in the Northwestern section of the United States on Sunday. What section of the United Sates is that front in on Tuesday?

_____

2. Where is the same front on Thursday? Explain.

_____

3. What general statement can you make about the movement of cold fronts, in the US?

_____

4. Where is precipitation, behind a cold front or in front?_____

5. On which days do the maps indicate warm fronts? _____

_____

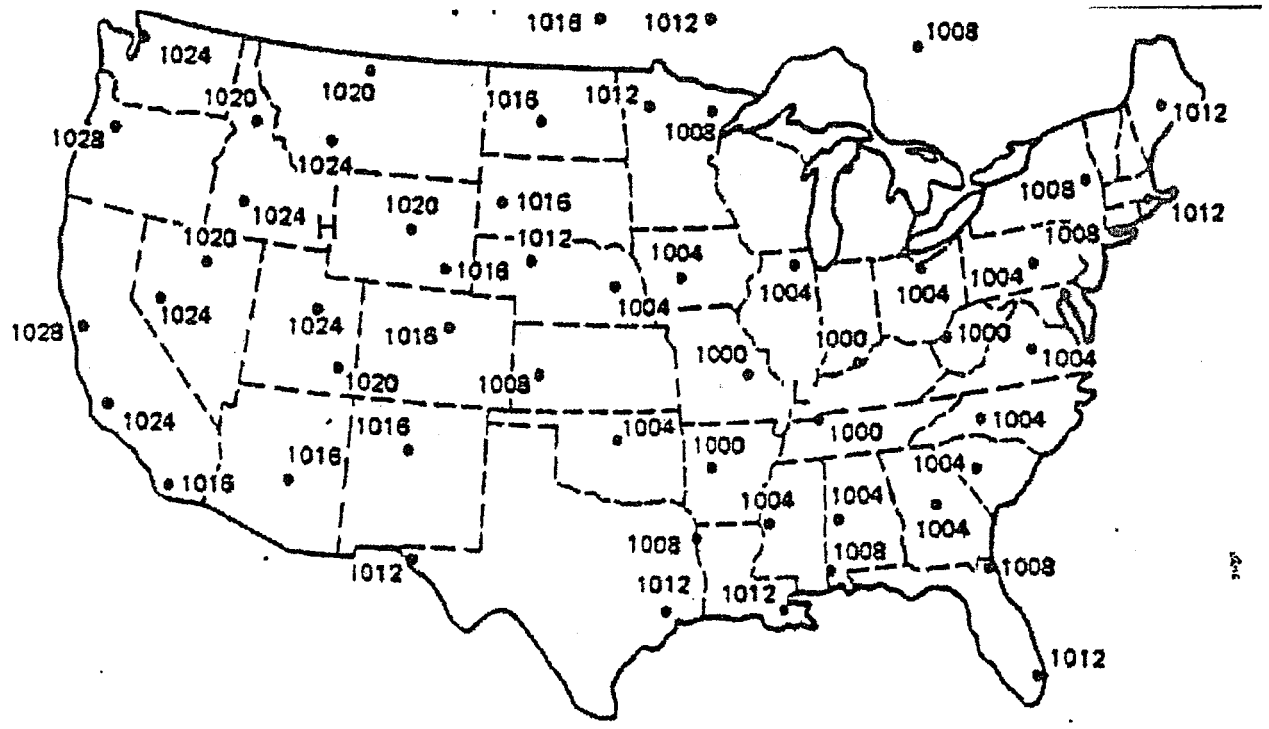
6. Describe the movement of the stationary front between Monday & Wednesday.

_____

7. Is it likely that the people who live in Dallas will see snow during the week? _____

8. On which day is Denver situated on the edge of a cold front? _____

C. All over the country meteorologists at weather stations measure pressure. They report the pressure to the national Weather Service. The pressures are recorded on maps. The lines called isobars are drawn connecting places having the same barometric pressure. In this activity you will draw isobars on the map below. You will use them to locate area of highs & low pressure.

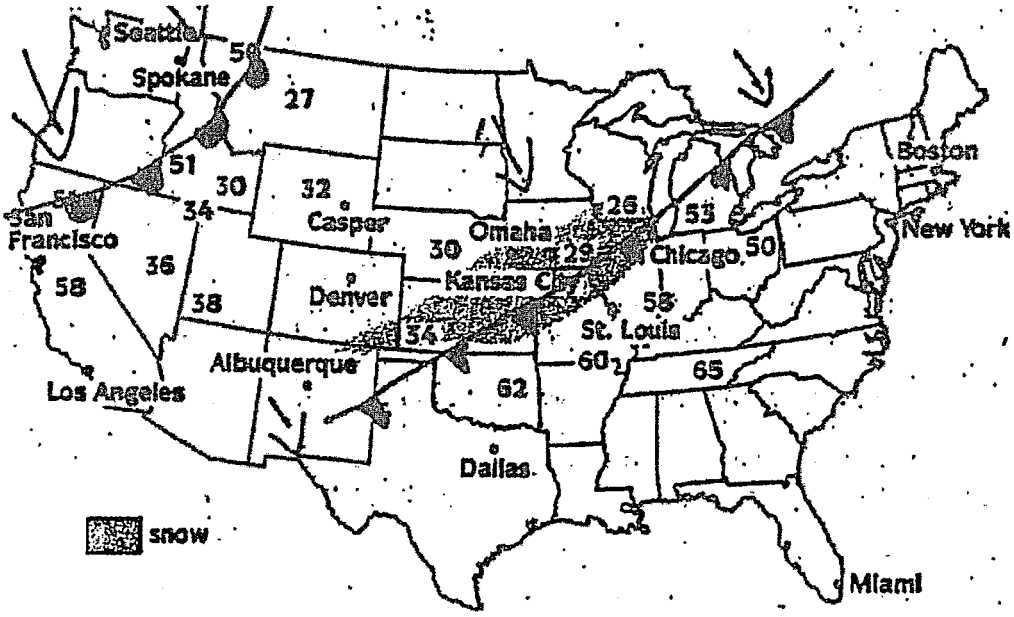


1. Air pressure is often measured in millibars. The numbers on the map indicate the atmospheric pressure in millibars. Draw a smooth line connecting all the weather stations that have the same pressure. Draw a separate line for each different pressure. Some of the lines form closed loops. The center of each closed loop represents an area of either high or low pressure. Start drawing the isolines around the high and low pressure center (already marked on the map with an "H" and "L"!).
2. What are these isolines called? _____
3. What is the air pressure in the high pressure center? _____
   The low pressure center? _____
4. High and low pressure areas contain different kinds of air masses. What kind of air is found in each area?
   High pressure _____ Low pressure _____
5. What is the weather in a high pressure area usually like?

   _____
6. What is the weather in a low pressure area usually like?

   _____

D. Note the weather information shown on Figure 3. Place an H (high pressure center) and L (low pressure center) at the appropriate location on the map.



1. What weather would you predict for the next 24 hours for Casper, Wyoming?

   _____
2. What weather would you predict for the next 24 hours for Dallas, Texas?

   _____
3. What major weather conditions are shown on a weather map?

   _____

   _____