

Clouds, Air Masses, Fronts, Station Models and Weather Maps

Name: _____

Some helpful words...

Condensation –

Air Mass –

Source Region –

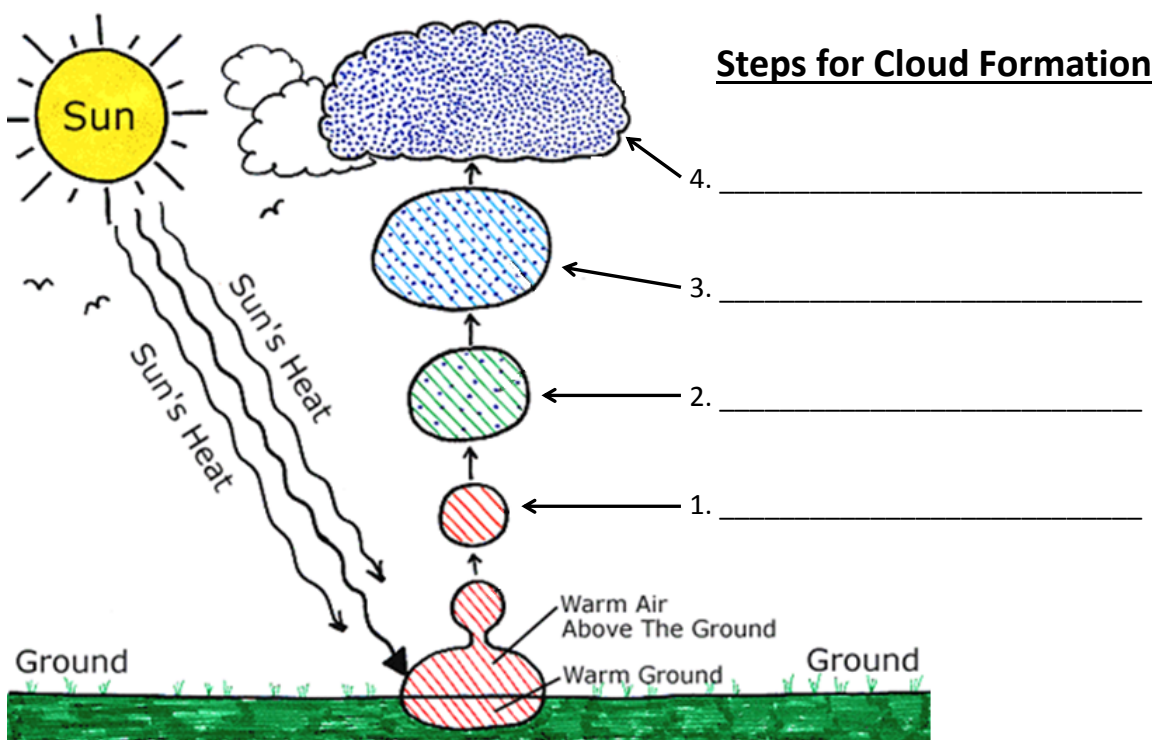
Front –

Warm Front –

Cold Front –

Station Model -

Cloud Formation

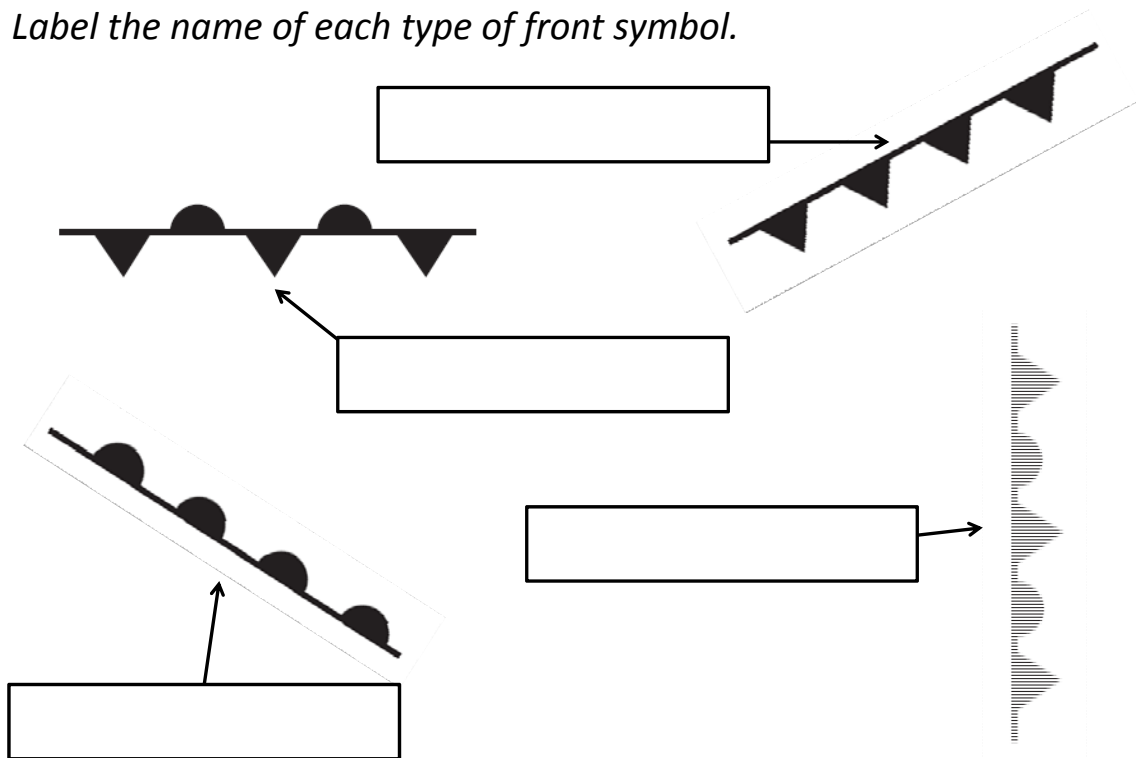


Air Masses and Source Regions



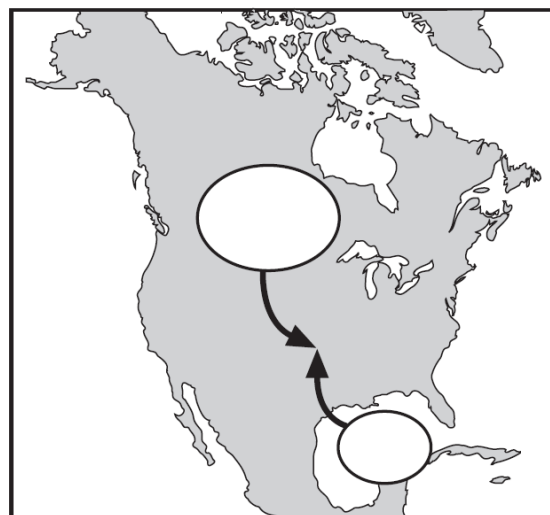
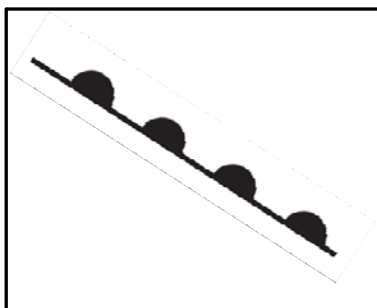
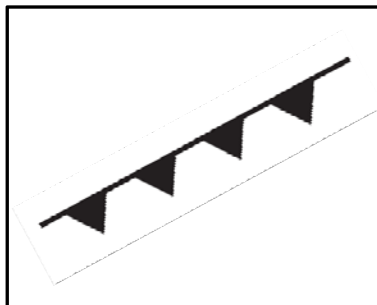
Fronts

Label the name of each type of front symbol.



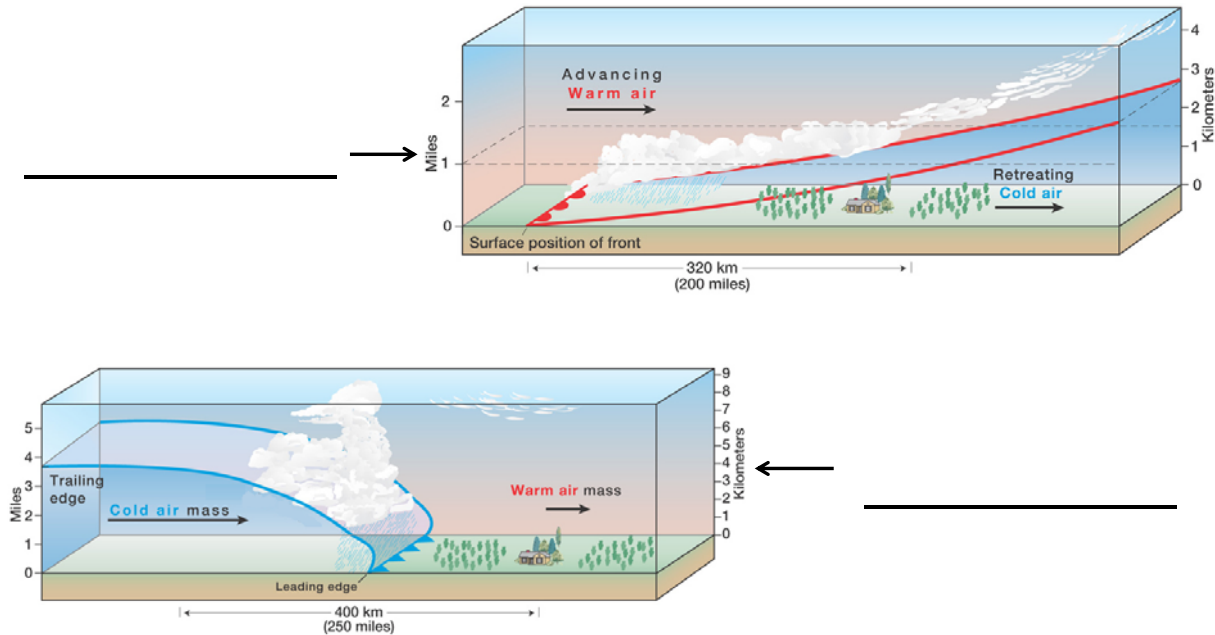
Air Masses and Fronts

1. In the boxes to the left, label each side of the fronts with the correct 2 letter air mass symbol.
2. The map below shows 2 air masses. Based on their source regions, label them with the correct 2 letter symbols.
3. Where the 2 arrows meet in the map below, correctly draw the front that would exist there.



Which Type of Front?

Label each type of front below.

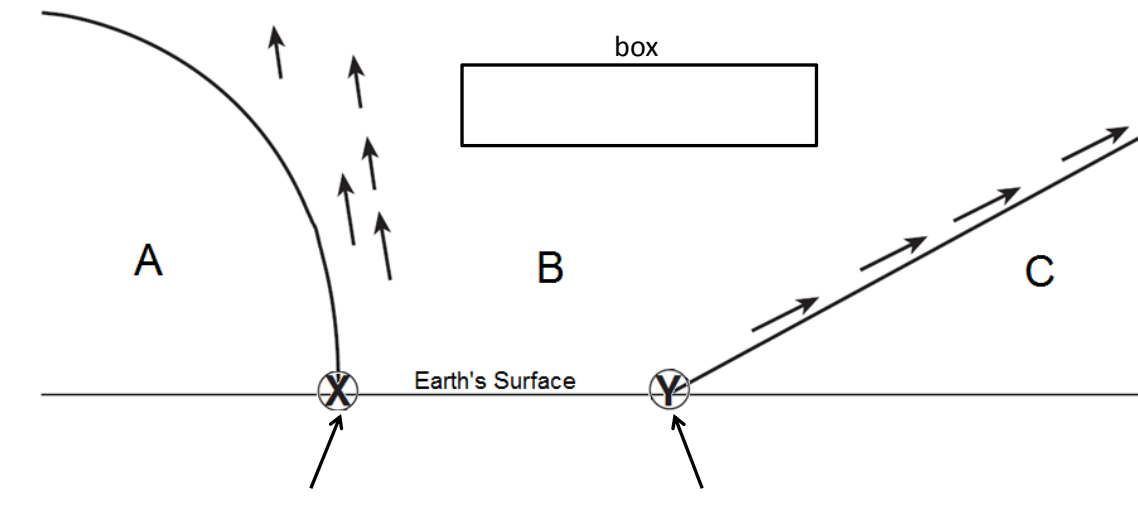


Front Cross Sections

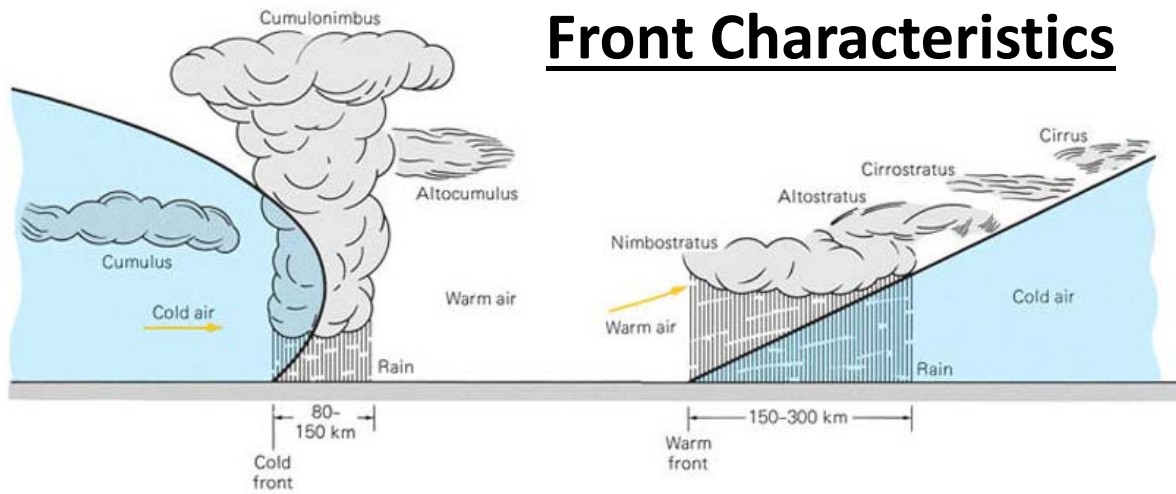
The diagram below shows 2 fronts from the side (a cross section).

Complete the diagram:

1. Label areas A, B, and C with the correct air mass symbols.
2. Label fronts X and Y with the correct names.
3. Draw an arrow in the box showing the direction the fronts are moving.



Front Characteristics



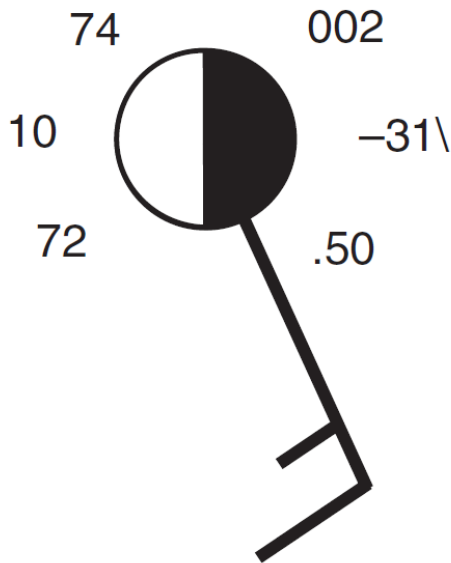
Identify the front each statement describes:

- | | |
|----------------------------------|---------------------------------|
| 1. Thunderstorms - _____ | 6. Replaces cold air - _____ |
| 2. Warm air behind - _____ | 7. Cold air behind - _____ |
| 3. Rain ahead - _____ | 8. Rain along - _____ |
| 4. Moves faster - _____ | 9. Longer precipitation - _____ |
| 5. Shorter precipitation - _____ | 10. Replaces warm air - _____ |

Station Models and Weather Maps

Weather Station Models

Identify the information shown by the station model, making sure to label the correct units.



Temperature: _____

Dew Point: _____

Pressure: _____

Barometric Change: _____

Wind Direction: _____

Wind Speed: _____

Cloud Cover: _____

Visibility: _____

Precipitation: _____

Drawing Station Models

Use the data to correctly draw a station model in the box.

- temperature - 30°F
- present weather - sleet
- dew point - 29°F
- wind speed - 10 knots
- wind direction - NE
- pressure - 1012.0mb
- cloud cover - 75%

Drawing Station Models

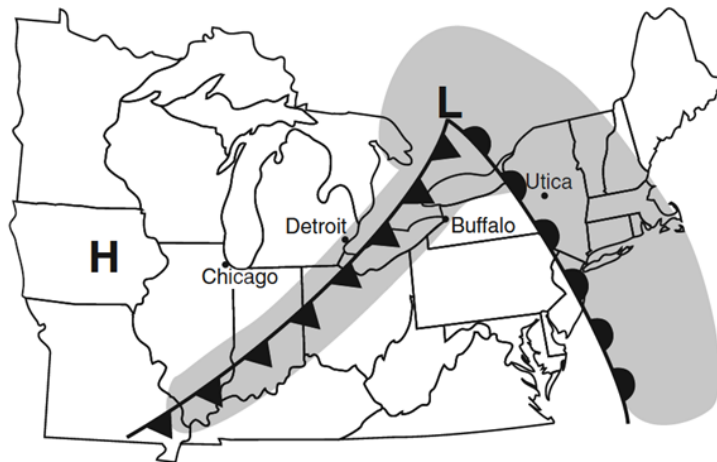
Use the data to correctly draw a station model in the box.

Air temperature	65°F
Dewpoint	64°F
Visibility	2 miles
Present weather	drizzle
Wind direction	from the west
Wind speed	5 knots
Amount of cloud cover	100%
Barometric pressure	996.2 millibars



Fronts on a Map

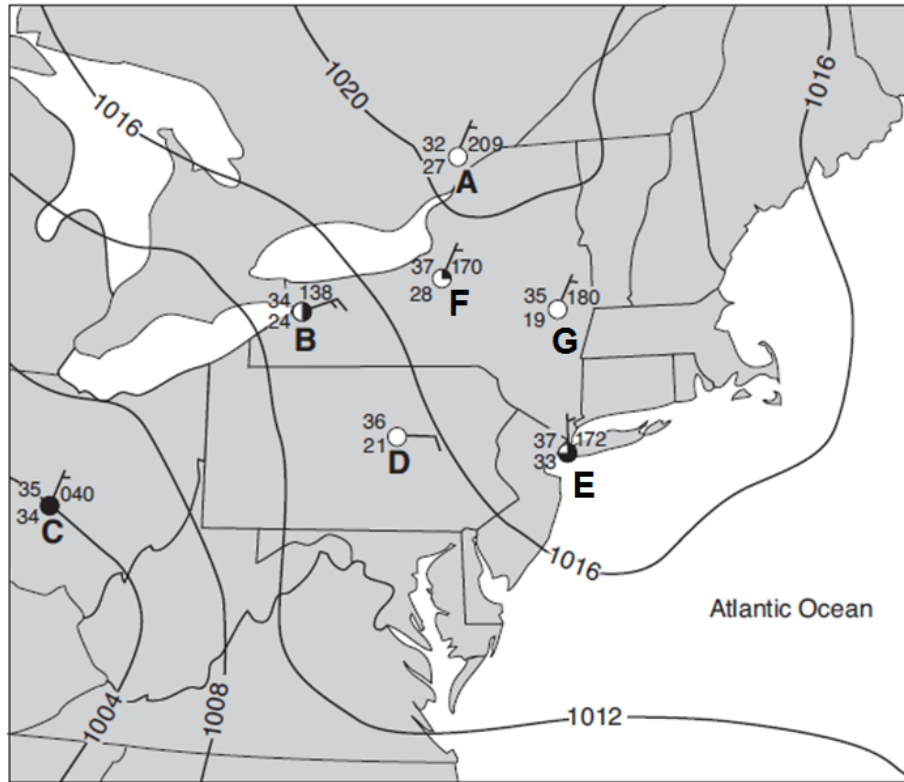
The map to the right shows weather symbols over a portion of the United States. The shaded regions represent where precipitation can occur.



TRUE or FALSE?

1. The cold front will pass by Buffalo next.
2. Utica will get colder when the warm front passes by.
3. The cold front is moving southwest.
4. Chicago has the highest air pressure.
5. Cold and warm fronts only connect to low pressure on the map.
6. The warm front is moving to the northeast.
7. Buffalo is the warmest city.
8. It rained longer in Detroit than Utica.
9. There is a greater chance of precipitation near the high pressure center.
10. Air is moving counterclockwise and inwards around the low pressure center.

Station Models on a Map



QUESTIONS

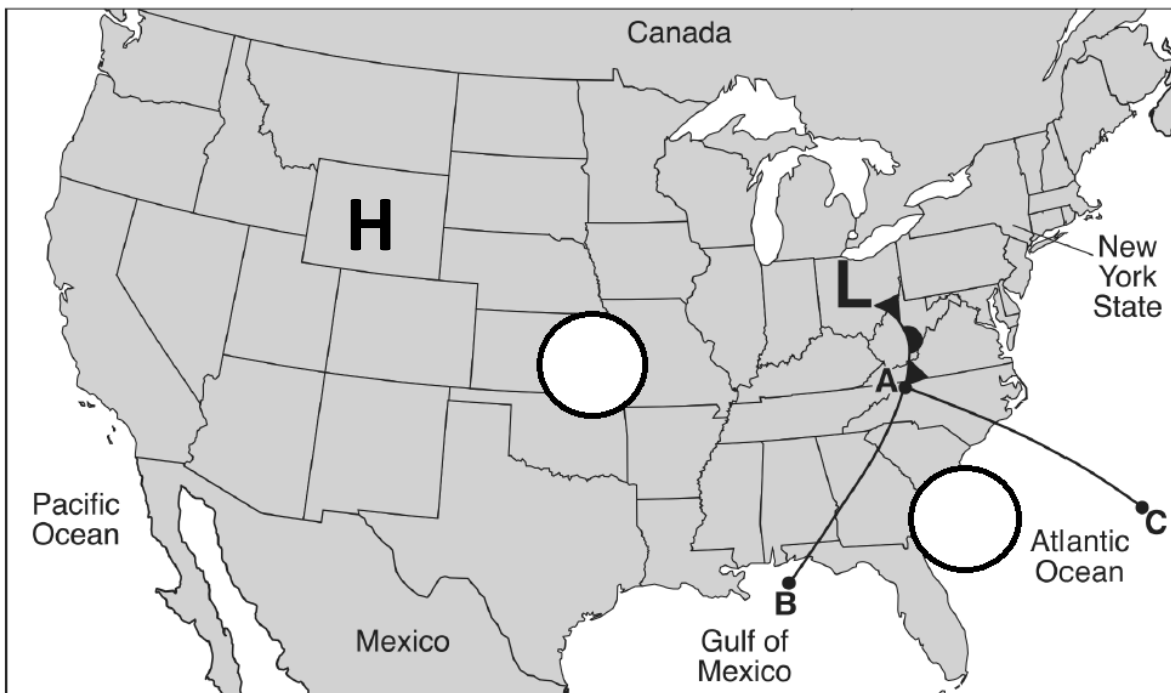
Use the map above to answer the next set of questions.

1. What do the isolines on the map measure?
2. Which station model has the highest relative humidity?
3. Which station model has an easterly wind?
4. What is the cloud cover at station E?
5. What is the wind speed at station B?
6. What is the air pressure in millibars at station A?
7. Compare stations F and G.... Which location has less water vapor in the air?

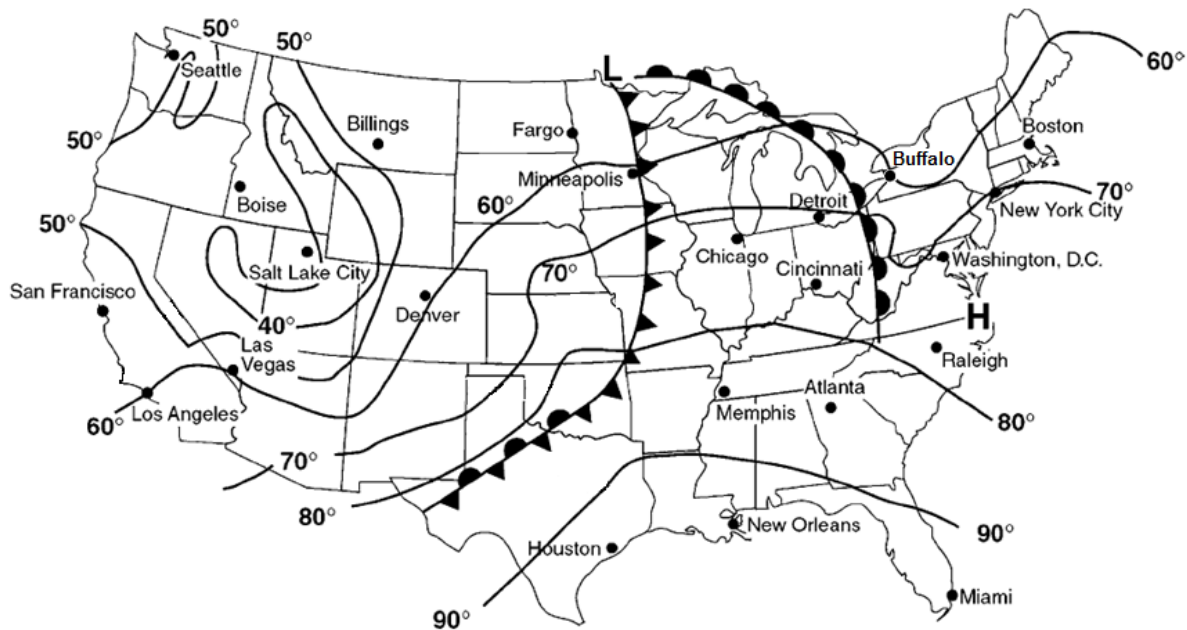
Weather Maps

Complete the map below:

1. Correctly draw the front symbols on lines A-B and A-C.
2. Label the circles with the correct air mass symbols that represent the air conditions in those areas.
3. Draw 3 arrows around the low pressure center to show the surface wind pattern in that area.
4. Draw 3 arrows around the high pressure center to show the surface wind pattern in that area.
5. Draw a large arrow starting at the "L" to show the direction the low pressure system will move over the next few days.



Weather Maps



Questions

Use the map above to answer the next set of questions.

1. Which city's temperature is closest to 40°F?
2. What are the names of the 3 fronts on the map?
3. Which cities could be experiencing precipitation?
4. Which city could be experiencing a thunderstorm?
5. Name the wind that Fargo is most likely experiencing.
6. In which direction will the low pressure system move over the next few days?