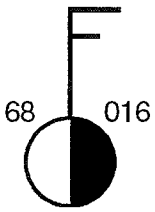
Name: _____

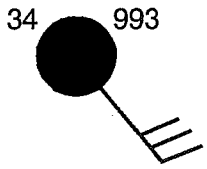
1) The diagram below illustrates a weather station model.

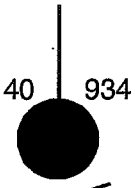


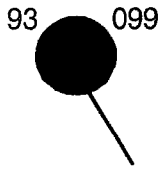
What is the air pressure in the area represented by this station model?

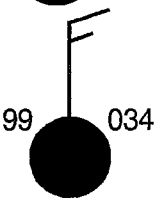
A) 169 mb
B) 1016.0 mb
C) 901.6 mb
D) 1001.6 mb

2) Which weather-station model shows an air pressure of 993.4 millibars?

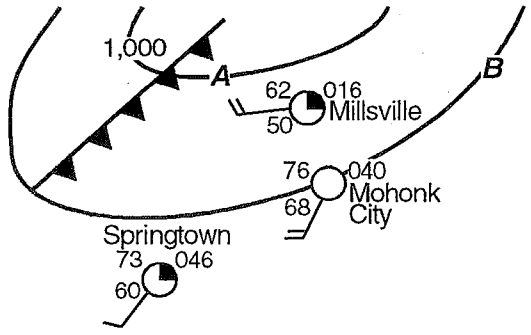
A) 

C) 

B) 

D) 

3) The weather map below shows a cold front approaching three cities. The two isobars are labeled *A* and *B*.



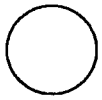
Which weather events will probably occur in Millsville as the cold front passes?

A) a decrease in clouds; no precipitation; no shift in wind direction
B) an increase in clouds; a brief thunderstorm; a shift in wind direction
C) an increase in clouds; no precipitation; no shift in wind direction
D) a decrease in clouds; prolonged precipitation; a shift in wind direction

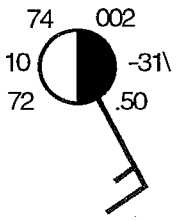
4) A weather station records the following data:

Air pressure is 1,001.0 millibars.
Wind is from the south.
Wind speed is 25 knots.

Using the proper weather map symbols, place this information in the correct locations on the weather station model provided below.



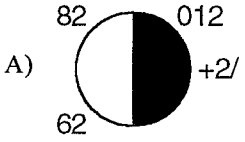
5) The station model below shows the weather conditions at Massena, New York, at 9 a.m. on a particular day in June.

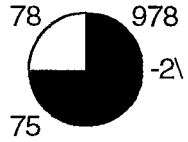


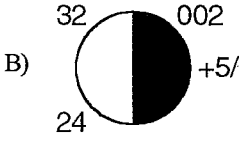
What was the barometric pressure at Massena 3 hours earlier on that day?

A) 999.7 mb
B) 1009.1 mb
C) 1003.3 mb
D) 997.1 mb

6) Which weather station model indicates the *highest* relative humidity?

A) 

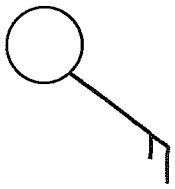
C) 

B) 

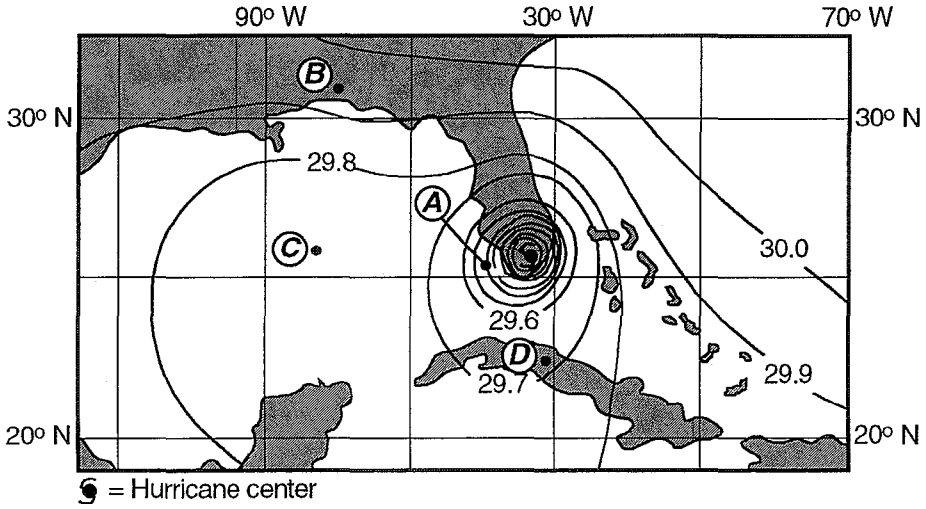
D) 

7) Plot the following data on the weather station model below.

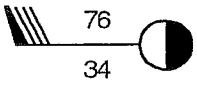
Dewpoint = 74° F, Cloud cover = 100%

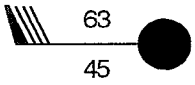


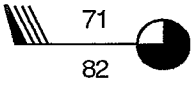
8) The weather map below shows a hurricane that was located over southern Florida. The isobars show air pressure in inches of mercury. Letters *A* through *D* represent four widely separated locations.

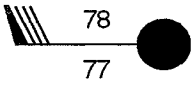


Which station model *best* represents some of the atmospheric conditions at location *A*?

A) 

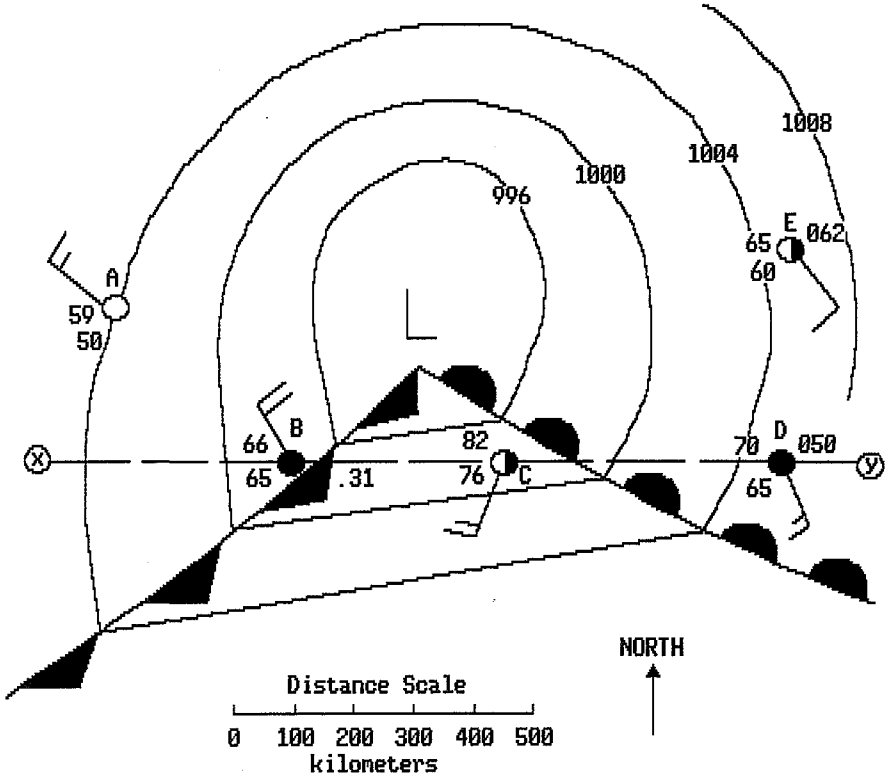
B) 

C) 

D) 

Questions 9 and 10 refer to the following:

The map below represents a weather system located over the central United States. Letters *A*, *B*, *C*, *D*, and *E* locate weather stations on the map.



9) Which weather station is experiencing clouds, heavy precipitation, and rapidly decreasing air temperature?

A) *B* B) *C* C) *D* D) *A*

10) If the weather system follows a normal storm track at a speed of 50 kilometers per hour, which best describes the atmospheric changes which will most likely occur at weather station *C* in about six hours?

A) little atmospheric change with a low probability of precipitation

B) air temperature decrease, air pressure increase, and precipitation

C) air temperature increase, air pressure increase, and clearing sky

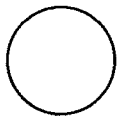
D) air temperature increase, no change in air pressure, and clearing sky

11) The following weather data was collected at a location in the eastern United States.

DATA TABLE

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

STATION MODEL

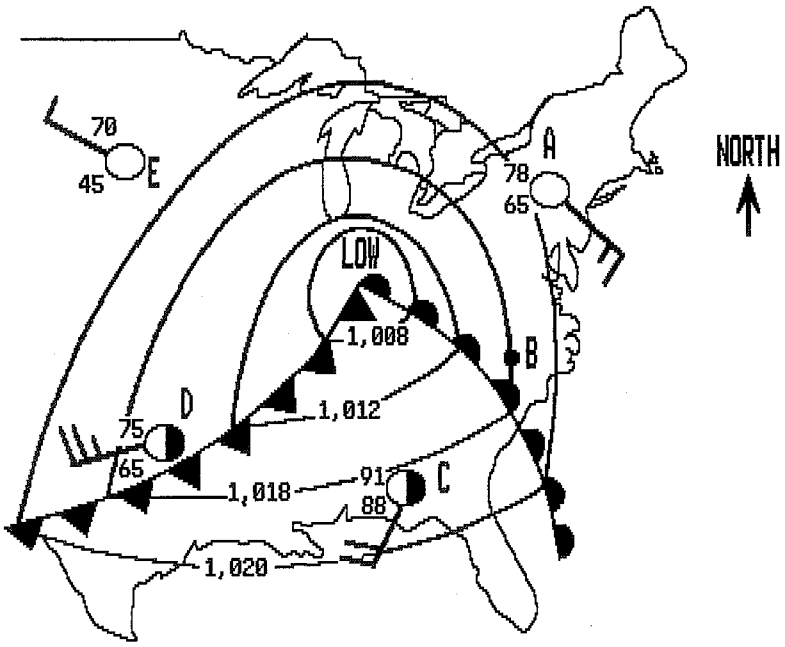


On the station model above, using the proper format, record:

- the amount of cloud cover
- the barometric pressure
- the symbol for the present weather

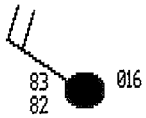
Questions 12 and 13 refer to the following:

The diagram below represents a weather map showing part of the United States. Letters *A* through *E* represent weather stations.

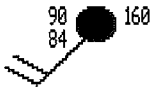


12) Which weather station model best represents weather conditions at station *B*?

A) 

C) 

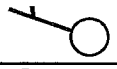
B) 

D) 

13) At which weather station is the barometric pressure reading most likely to be 1,018.0 millibars?

A) *C* B) *B* C) *D* D) *A*

14) The table below shows weather conditions for 4 consecutive days at a location in New York State. Each reading was taken at 1 p.m.

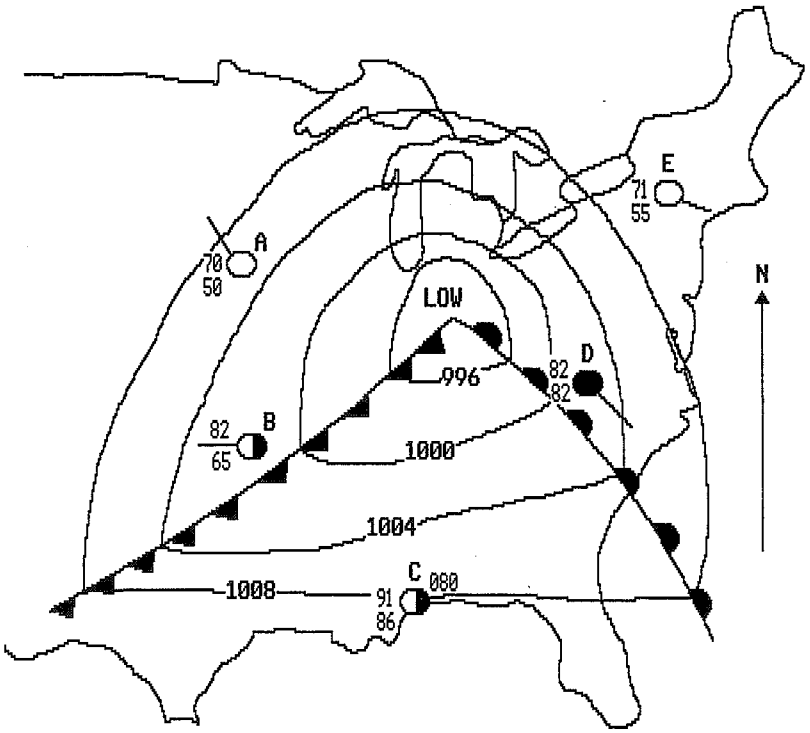
Day	Temperature (°F)	Wind Speed, Wind Direction, Cloud Cover	Barometric Pressure (mb)	Present Weather
Monday	6		1,028.0	Clear
Tuesday	4		1,029.0	Sunny
Wednesday	24		1,017.0	Light snow
Thursday	26		1,011.0	Light snow

On which two days was the relative humidity probably *highest*?

A) Wednesday and Thursday
B) Tuesday and Wednesday
C) Thursday and Monday
D) Monday and Tuesday

Questions 15 and 16 refer to the following:

The diagram below represents a surface weather map of a portion of the United States. The map shows a low-pressure system with frontal lines and five weather stations *A* through *E*. Note that part of the weather data is missing from each station. [All temperatures are in °F.] [Refer to the *Earth Science Reference Tables*.]



15) The wind direction at station *A* is

A) northwest
B) southwest
C) northeast
D) southeast

16) The weather at station *C* would most likely be

A) partly cloudy, windy, and very cold
B) very dry and extremely hot
C) overcast, humid, and cool
D) partly cloudy and warm

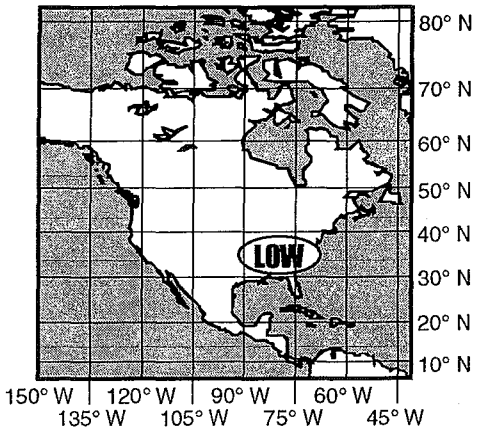
Name: _____

1) Compared to a maritime tropical airmass, a maritime polar airmass has
   1) lower temperature and more water vapor
   2) lower temperature and less water vapor
   3) higher temperature and less water vapor
   4) higher temperature and more water vapor

2) An airmass from the Gulf of Mexico, moving north into New York State, has a high relative humidity. What other characteristics will it probably have?
   1) cool temperatures and low pressure
   2) cool temperatures and high pressure
   3) warm temperatures and low pressure
   4) warm temperatures and high pressure

Questions 3 and 4 refer to the following:

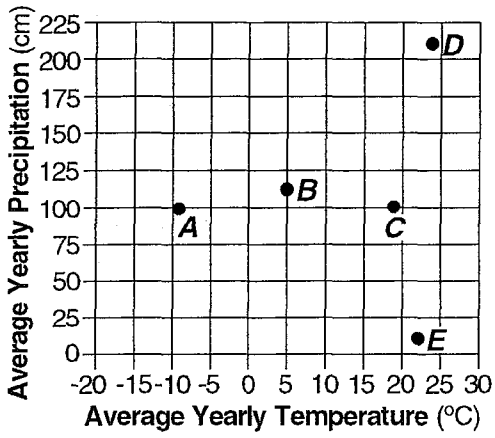
The map of North America below shows a low-pressure system located over an area in the southeastern United States.



3) An air mass originates with its center located at 50° N and 145° W. Based on the map, this air mass would be classified as
   1) **mT**
   2) **cP**
   3) **cT**
   4) **mP**

4) In the next few days, because of the prevailing winds, the region of low pressure will probably move toward the
   1) southwest
   2) northwest
   3) southeast
   4) northeast

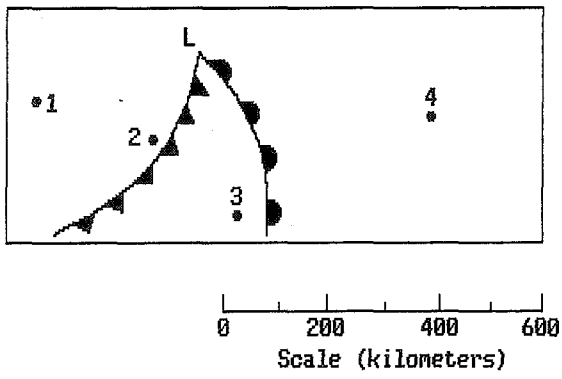
5) The graph below shows the average yearly temperature and average yearly precipitation for Earth locations *A* through *E*.



Which type of air mass would most likely have low humidity and high air temperature?
   1) **cT**
   2) **mP**
   3) **mT**
   4) **cP**

6) In New York State, dry, cool air masses (**cP**) often interact with moist, warm air masses (**mT**). Which statement correctly matches each air mass with its usual geographic source region?
   1) **cP** is from northern Canada and **mT** is from the Gulf of Mexico.
   2) **cP** is from northern Canada and **mT** is from the deserts of the southwestern United States.
   3) **cP** is from the North Atlantic Ocean and **mT** is from the Gulf of Mexico.
   4) **cP** is from the North Atlantic Ocean and **mT** is from the deserts of the southwestern United States.

7) The diagram below shows four points on a map with their relative positions to a low-pressure weather system. Which point is most likely having heavy precipitation?



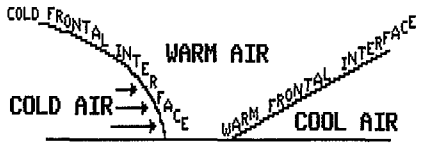
   1) 3
   2) 4
   3) 2
   4) 1

8) Which type of air mass usually contains the most moisture?
   1) **mP**
   2) **cT**
   3) **cP**
   4) **mT**

9) Which statement *best* explains why precipitation occurs at frontal boundaries?

1) Cold fronts move slower than warm fronts.
2) Cold fronts move faster than warm fronts.
3) Warm, moist air rises when it meets cold, dry air.
4) Warm, moist air sinks when it meets cold, dry air.

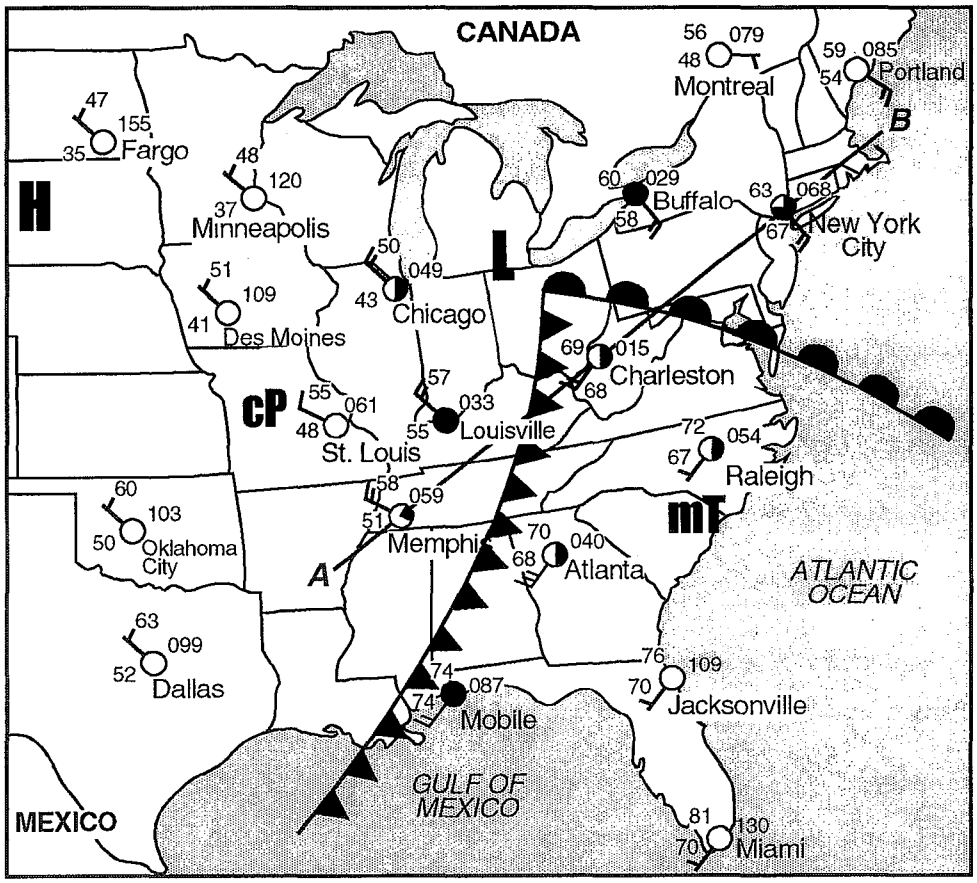
10) The diagram below represents a cross-sectional view of airmasses associated with a low-pressure system. The cold frontal interface is moving faster than the warm frontal interface. What usually happens to the warm air that is between the two frontal surfaces?



1) The warm air is forced under the cold frontal interface but over the warm frontal interface.
2) The warm air is forced over both frontal interfaces.
3) The warm air is forced under both frontal interfaces.
4) The warm air is forced under the cold frontal interface but under the warm frontal interface.

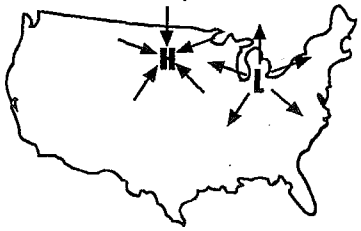
Questions 11 through 13 refer to the following:

The weather map below shows weather systems over the central and eastern United States and weather data for several cities.

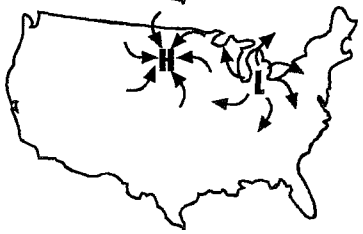


11) Which map correctly shows the movement of surface air associated with the high-pressure and low-pressure systems?

1) 

2) 

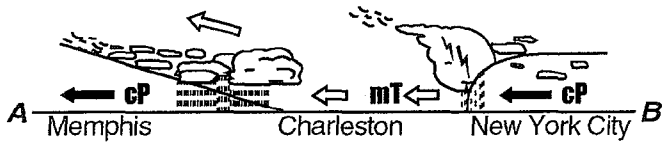
3) 

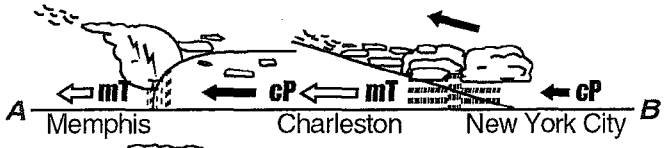
4) 

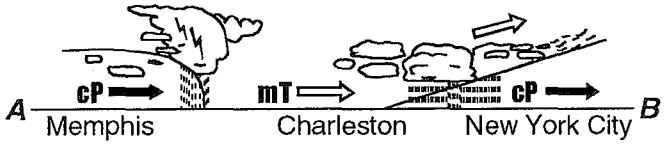
12) The **cP** air mass shown on the map most likely developed over

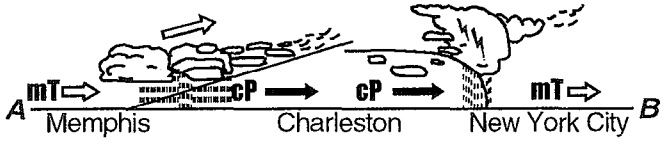
1) the Gulf of Mexico 2) central Mexico 3) central Canada 4) the North Atlantic

13) Which cross-sectional diagram of the lower atmosphere along line *AB best* represents the movement of the fronts and air masses?

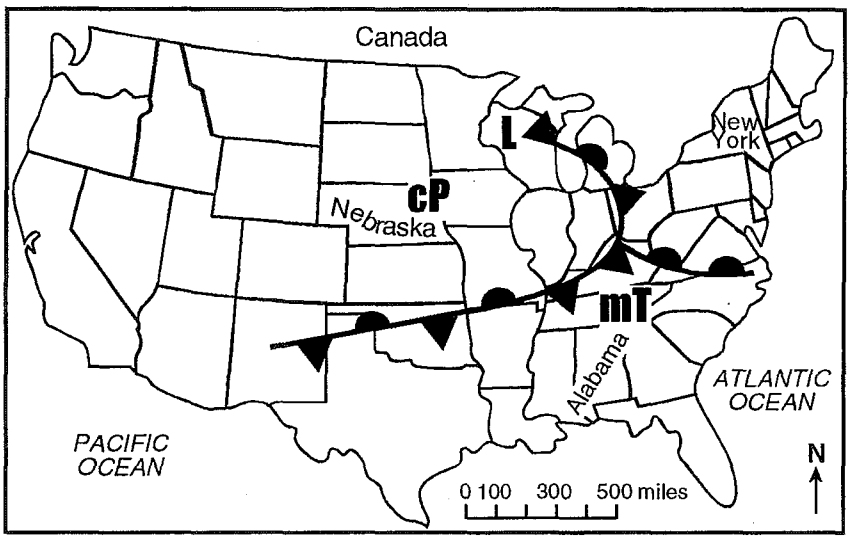
1) 

2) 

3) 

4) 

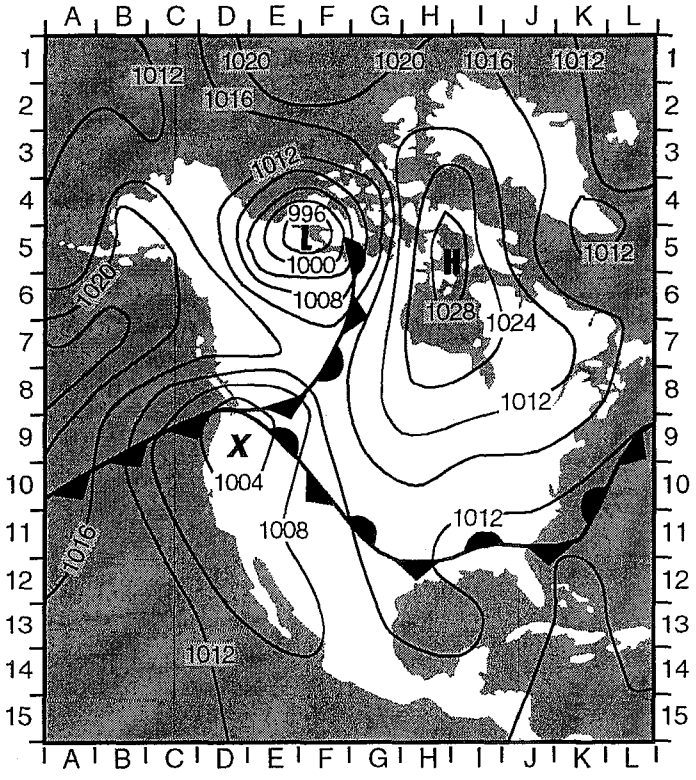
14) The weather map below shows a weather system that is affecting part of the United States.



The air mass influencing the weather of Nebraska most likely originated in

1) the northern Atlantic Ocean
2) central Canada
3) the northern Pacific Ocean
4) central Mexico

15) A grid system of letters and numbers is provided along the edges of the weather map of North America below to assist in finding locations. Isobars are labeled in millibars. Letter *X* represents the center of a second low-pressure system.



Which type of front is shown at grid coordinates *A*-10?

1) cold
2) occluded
3) warm
4) stationary