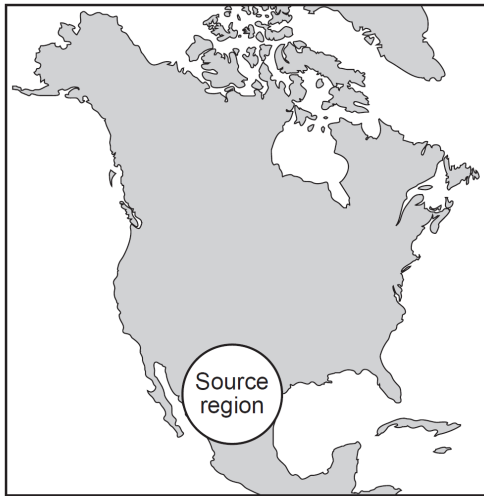1. The map of North America below shows the source region of an air mass forming mostly over Mexico.

This air mass originating over Mexico is classified as

A) continental polar
B) continental tropical
C) maritime polar
D) maritime tropical

Base your answers to questions **2** through **4** on the weather map below and on your knowledge of Earth science. The map of a portion of eastern North America shows a high-pressure center (**H**) and a low-pressure center (**L**), frontal boundaries, and present weather conditions.
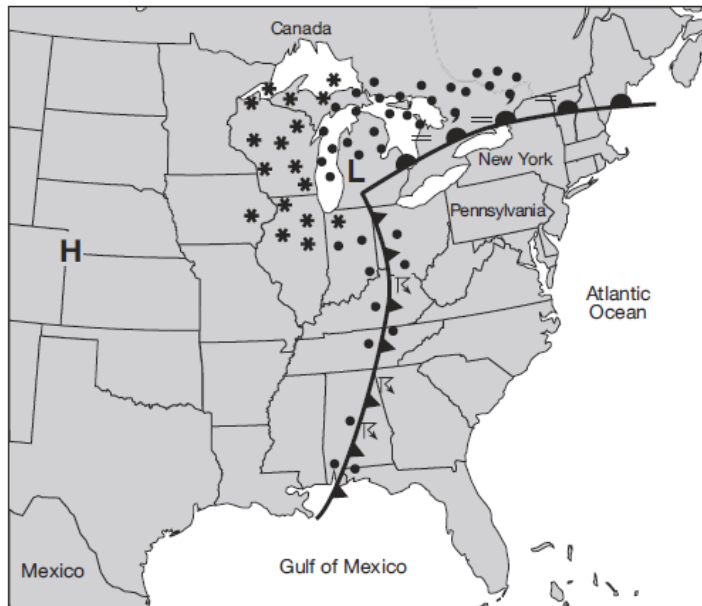
2. The general surface wind circulation associated with the high-pressure center (**H**) is most likely

A) clockwise and outward
B) clockwise and inward
C) counterclockwise and outward
D) counterclockwise and inward

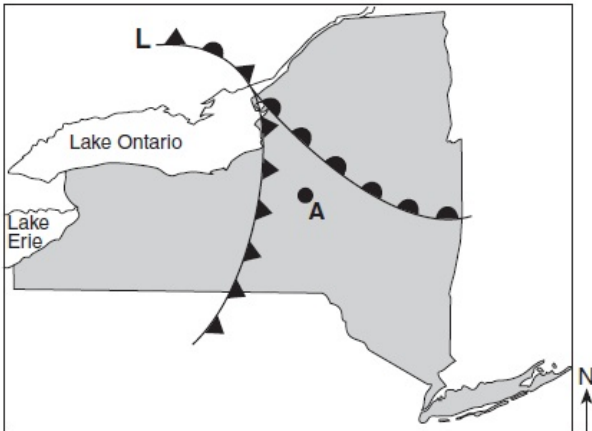3. What was the most likely source region for the air mass over Pennsylvania?

A) New York State
B) Pacific Ocean
C) Gulf of Mexico
D) Canada

4. Which weather condition is shown along the cold front?

A) fog   B) snow   C) haze   D) thunderstorms

5. The weather map below shows a portion of a low-pressure system.

Which front will most likely pass over location *A* during the next two hours'?

A) warm   B) stationary   C) occluded   D) cold

6. In the Northern Hemisphere, surface winds around the center of a
   hurricane move

   A) clockwise and inward
   B) clockwise and outward
   C) counterclockwise and inward
   D) counterclockwise and outward

Base your answers to questions **7** through **9** on the weather map below and on your knowledge of Earth Science. The map shows a low-pressure system with two fronts extending from its center (**L**). Points A, B, C, and D represents locations on Earth's surface. Two different air masses are labeled.
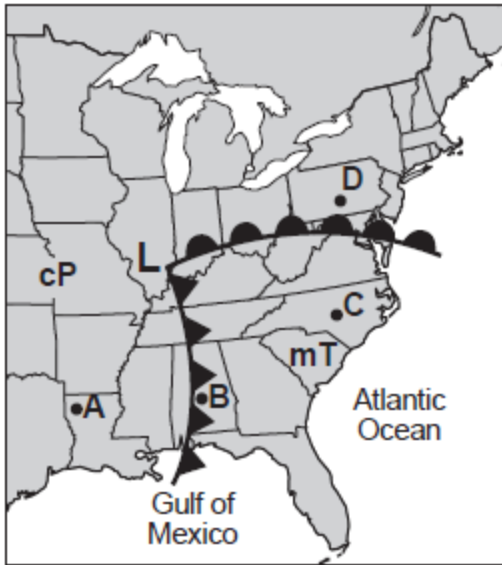
7. Which cross section best represents the frontal boundary (*fb*) and general pattern of air movements between locations C and D?

A)

B)

C)

D)

8. Which locations are most likely experiencing precipitation?

   A) A and B B) B and C C) C and D D) D and B

9. Which atmospheric conditions describe the air mass that is influencing weather conditions at location C?

   A) cool and dry   B) cool and moist   C) warm and dry   D) warm and moist

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10. The winds shift from southwest to northwest as heavy rains and hail begin to fall in Albany, New York. These changes are most likely caused by the arrival of

   A) an mT air mass   B) a cT air mass
   C) a cold front   D) a warm front

11. The weather characteristics of air mass result primarily from its

   A) geographic origin   B) size and shape
   C) rate of movement   D) direction of movement

12. A weather station model for a location in New York State is shown below.
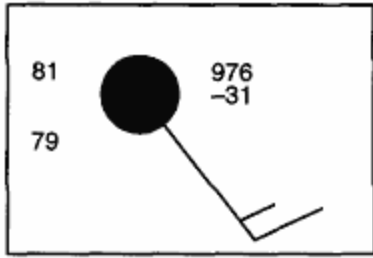
The air mass over this location is best described as

A) cold with low humidity and high air pressure
B) cold with high humidity and low air pressure
C) warm with high humidity and low air pressure
D) warm with low humidity and high air pressure

13. The cross section below shows a weather front. The large arrow shows the direction of the movement of the cool air mass.
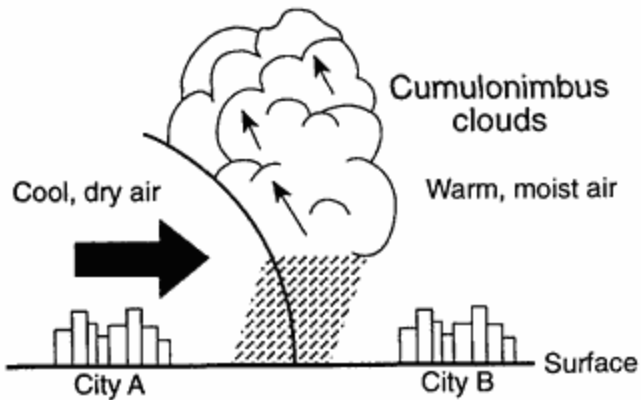
Which type of weather front is shown?

A) warm front   B) cold front
C) occluded front   D) stationery front

14. Cities *A*, *B*, *C*, and *D* on the weather map below are being affected by a low-pressure system (cyclone).
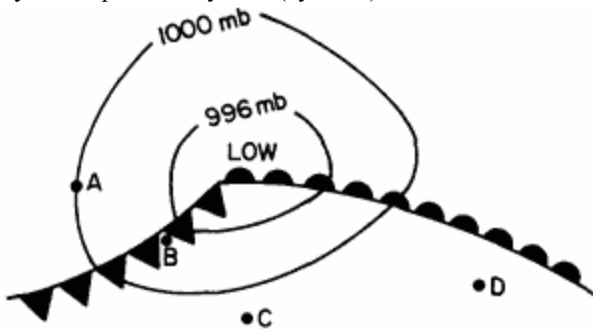

Which city would have the most unstable atmospheric conditions and the greatest chance of precipitation?

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

15. Why do clouds usually form at the leading edge of a cold airmass?

A) Cold air flows over warm air, causing the warm air to descend and cool.
B) Cold air flows under warm air, causing the warm air to rise and cool.
C) Cold air contains more dust than warm air does.
D) Cold air contains more water vapor than warm air does.

16. Which map shows normal paths followed by low-pressure storm centers as they pass across the United States?

A)

B)

C)

D)
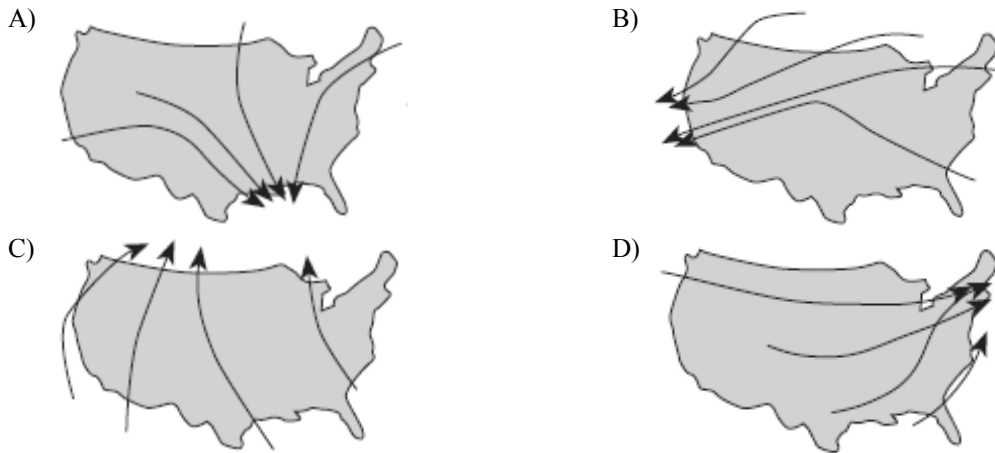
17. Base your answer to the following question on the weather map below and on your knowledge of Earth science. The weather map shows a low pressure system over New York State on a July day. The **L** represents the center of the low, and two fronts extend from this center. Locations of some cities are indicated.
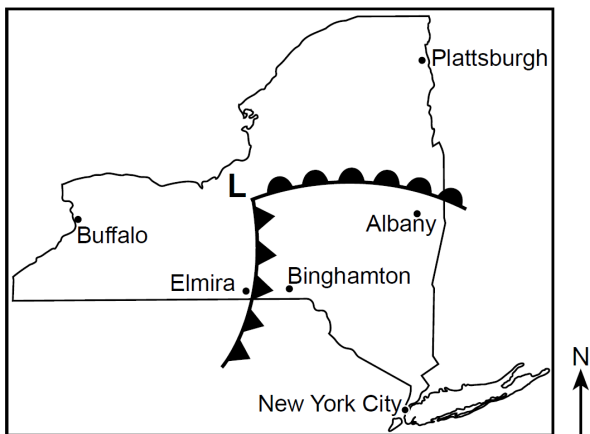
If the center of the low-pressure system follows a normal storm track, toward which city would the center of this low most likely move?

A) Buffalo   B) Elmira   C) New York City   D) Plattsburgh

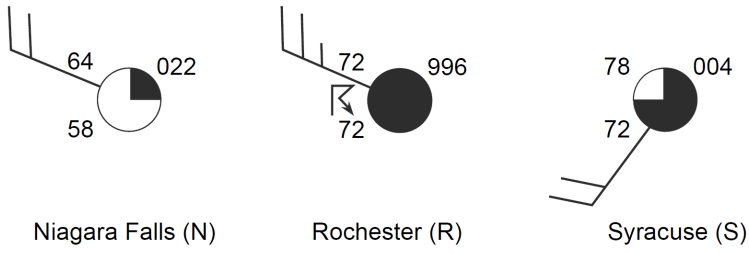18. The station model below shows several weather variables recorded at a particular location.

62   **970**
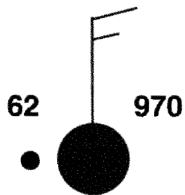
What was the most likely dewpoint at this location?
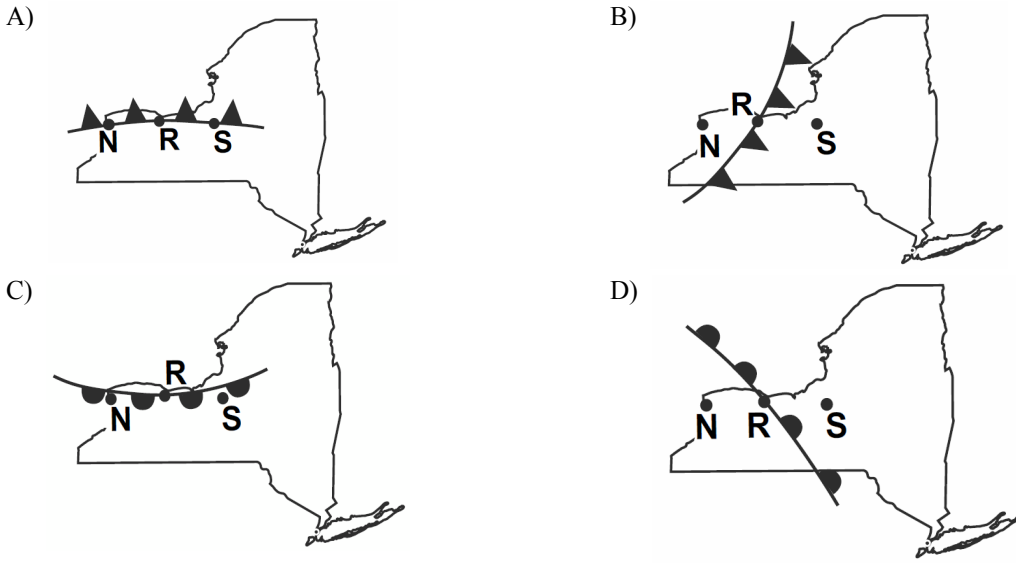
A) 32°F   B) 40°F   C) 61°F   D) 70°F

19. Weather station models for three New York State cities on the same day at the same time are shown below.

Niagara Falls (N)   Rochester (R)   Syracuse (S)

Which map shows the front that was most likely passing through Rochester at that time?

A)

B)

C)

D)

20. Which weather station model indicates the highest relative humidity?

A)

B)

C)

D)