

Name \_\_\_\_\_

# Fronts Review

1. The diagram below represents a cross-sectional view of air masses 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 over both frontal interfaces.
- 2) The warm air is forced under both frontal interfaces.
- 3) The warm air is forced over the cold frontal interface but under the warm frontal interface.
- 4) The warm air is forced under the cold frontal interface but over the warm frontal interface.

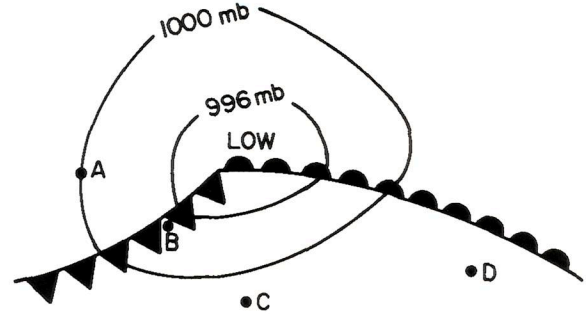
2. Why do clouds usually form at the leading edge of a cold airmass?

- 1) Cold air flows over warm air, causing the warm air to descend and cool.
- 2) Cold air flows under warm air, causing the warm air to rise and cool.
- 3) Cold air contains more dust than warm air does.
- 4) Cold air contains more water vapor than warm air does.

3. As a cold front passes a New York weather station, which changes will usually be observed in barometric pressure and air temperature?

- 1) Pressure rises and temperature falls.
- 2) Both pressure and temperature rise.
- 3) Both pressure and temperature fall.
- 4) Pressure falls and temperature rises.

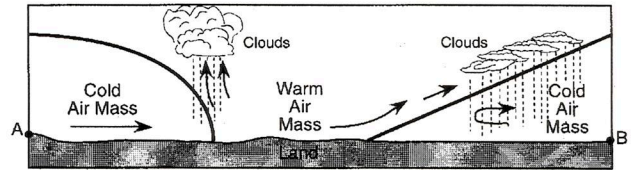
4. Cities A, B, C, and D on the weather map below are being affected by a low-pressure system (cyclone).



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

- 1) A
- 2) B
- 3) C
- 4) D

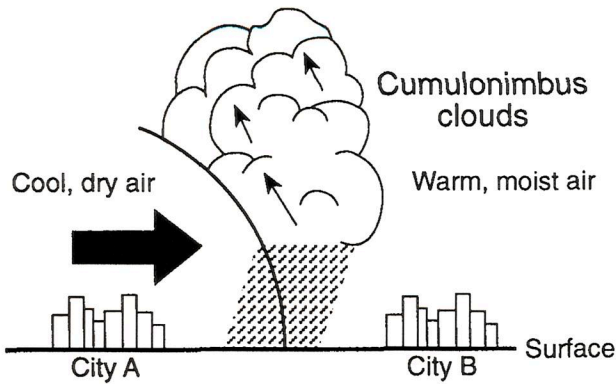
5. The diagram below represents a cross section of air masses and frontal surfaces along line AB. The dashed lines represent precipitation.



Which weather map best represents this frontal system?

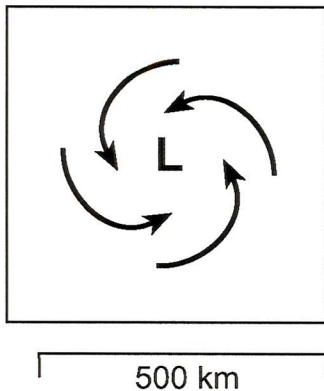
- 1)
- 2)
- 3)
- 4)

6. 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?

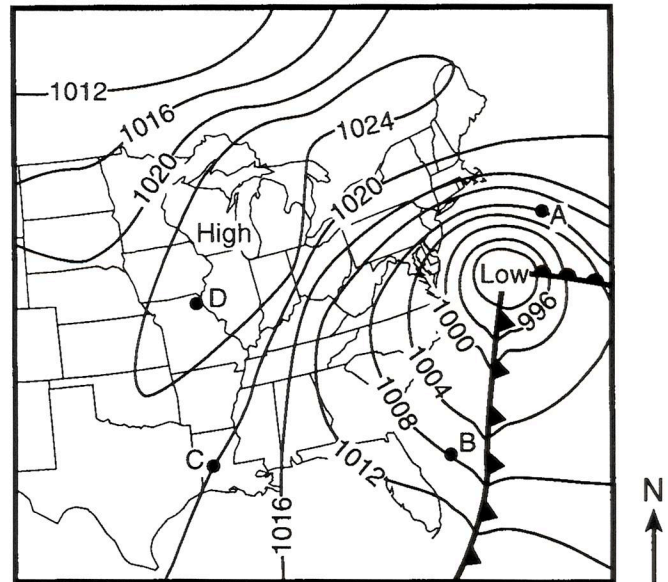
- |               |                     |
|---------------|---------------------|
| 1) warm front | 3) occluded front   |
| 2) cold front | 4) stationary front |
7. A map view of surface air movement in a low-pressure system is shown below.



The air near the center of this low-pressure system usually will

- 1) evaporate into a liquid
- 2) reverse direction
- 3) rise and form clouds
- 4) squeeze together to form a high-pressure system

Base your answers to questions 8 through 10 on the weather map below. Points A, B, C, and D are locations on Earth's surface.



8. Which type of front extends southward from the center of the low?
 

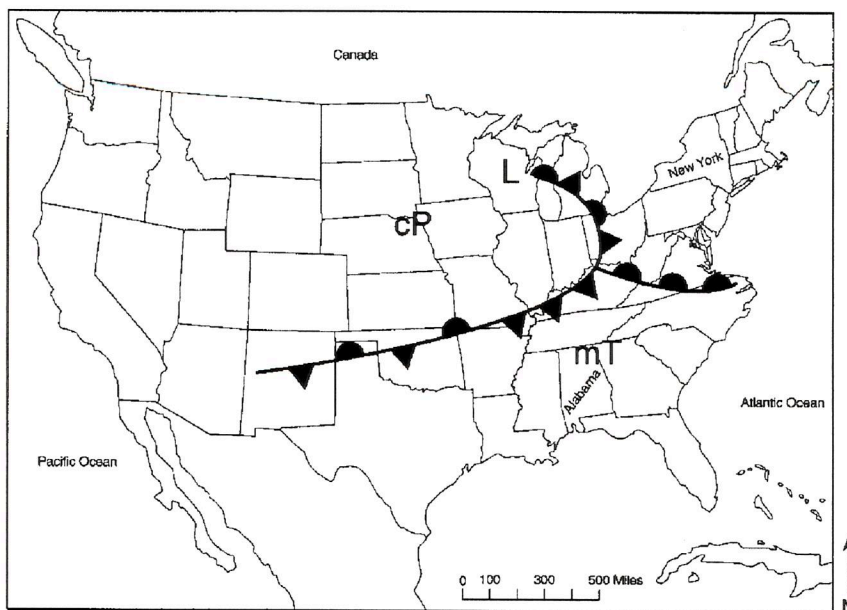
|             |               |
|-------------|---------------|
| 1) occluded | 3) stationary |
| 2) warm     | 4) cold       |
9. The isolines on the map represent values of air
 

|             |                |
|-------------|----------------|
| 1) density  | 3) pressure    |
| 2) humidity | 4) temperature |
10. The strongest winds are closest to location
 

|      |      |
|------|------|
| 1) A | 3) C |
| 2) B | 4) D |

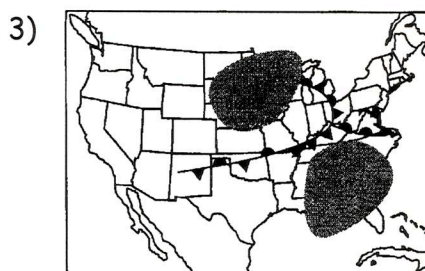
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Base your answers to questions 11 through 16 on the weather map below, which shows a weather system that is affecting part of the United States.

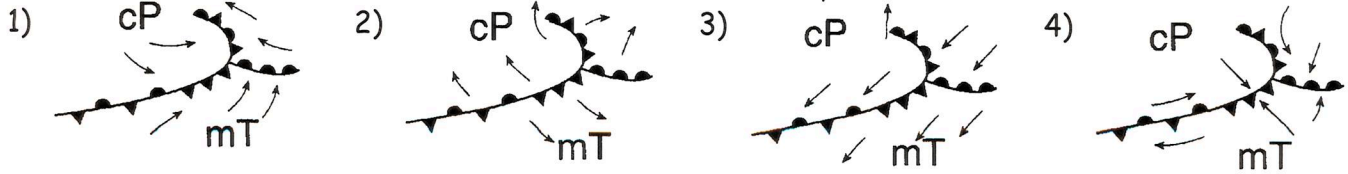


11. What is the total number of different kinds of weather fronts shown on this weather map?  
 1) 1                                      2) 2                                      3) 3                                      4) 4

12. Which map best shows the areas in which precipitation is most likely occurring? [Darkened areas represent precipitation.]



13. Which diagram shows the surface air movements most likely associated with the fronts?



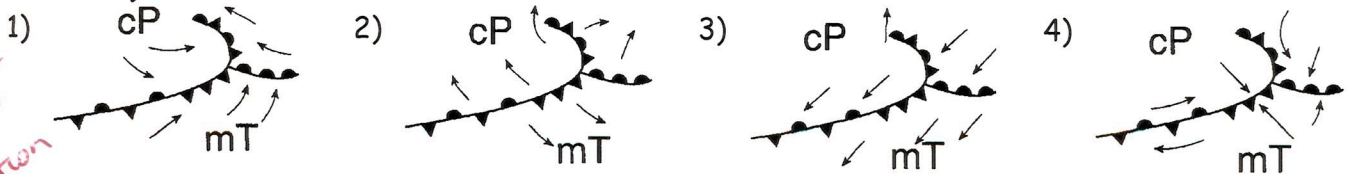
14. Compared to the air over most of the map region, the air mass centered over Alabama is

- 1) warmer and more humid
- 2) warmer and drier
- 3) colder and more humid
- 4) colder and drier

15. Which sequence of events forms the clouds associated with this weather system?

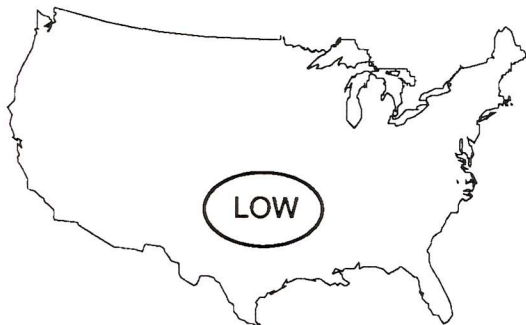
- 1) Moist air rises and becomes saturated in clean air.
- 2) Moist air rises, becomes saturated, and condenses on microscopic particles.
- 3) Moist air falls and reaches the dewpoint in clean air.
- 4) Moist air falls, reaches the dewpoint, and condenses on microscopic particles.

16. Which diagram shows the surface air movements most likely associated with the fronts (**Low Pressure**)?



*\* Repeat Question*

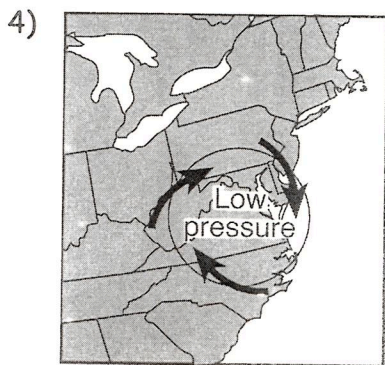
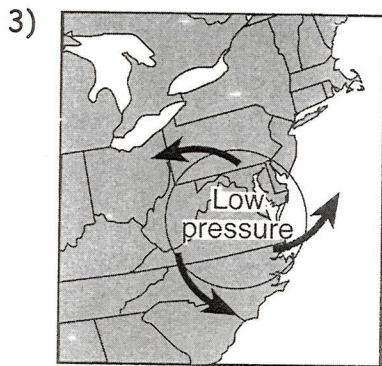
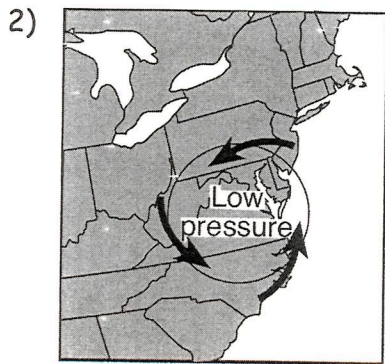
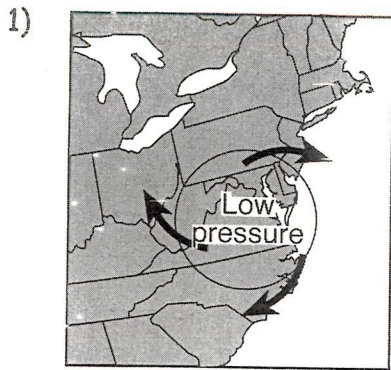
17. The map below shows a low-pressure system located over an area in the south-central United States.



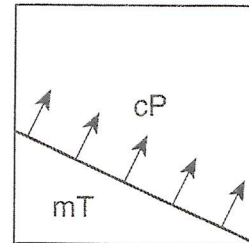
In the next few days, because of the prevailing winds, the air mass will probably move toward the

- 1) southeast
- 2) northeast
- 3) southwest
- 4) northwest

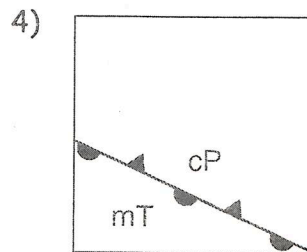
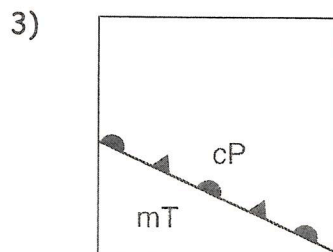
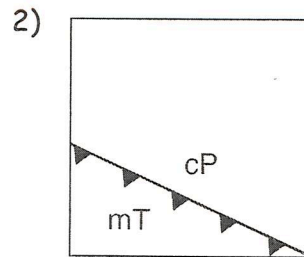
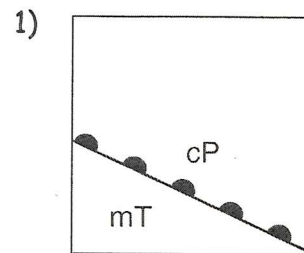
18. Which map best shows the general surface wind pattern in a low-pressure system located over the eastern United States?



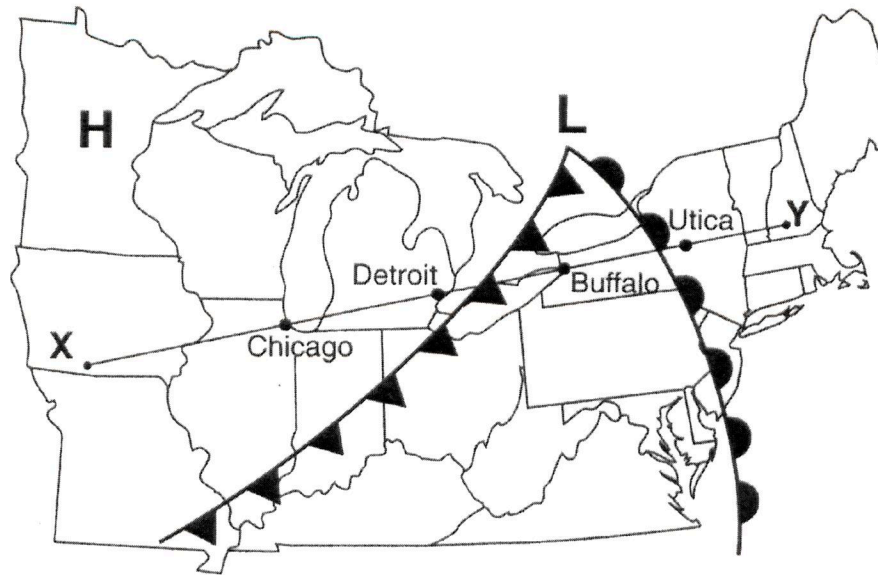
19. The map below shows the boundary between two air masses. The arrows show the direction in which the boundary is moving.



Which weather map uses the correct weather front symbol to illustrate this information?

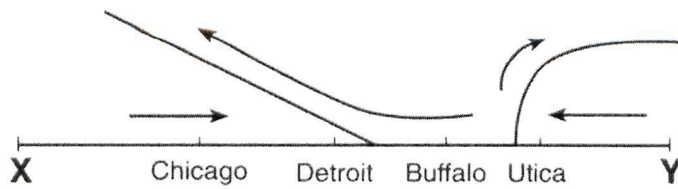


Base your answers to questions 20 through 22 on the weather map below, which shows a high-pressure center (H) and a low-pressure center (L), with two fronts extending from the low-pressure center. Points X and Y are locations on the map connected by a reference line.

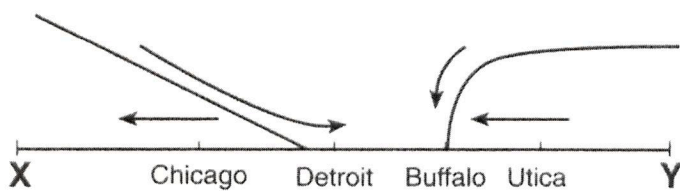


20. Which cross section best represents the fronts and air movements in the lower atmosphere along line XY?

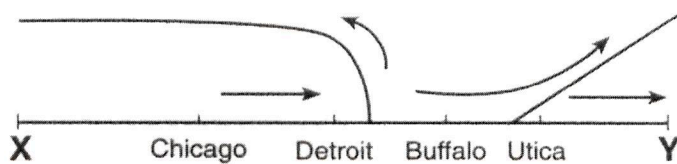
1)



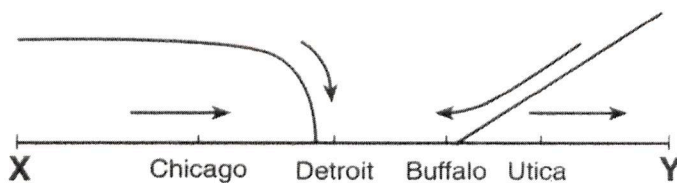
2)



3)



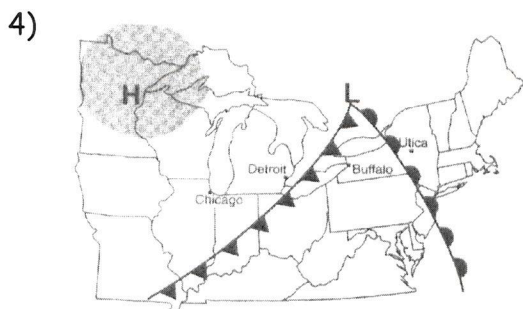
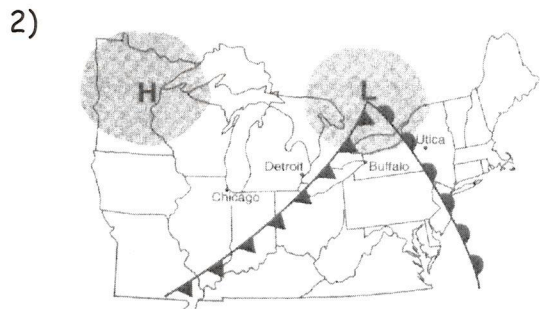
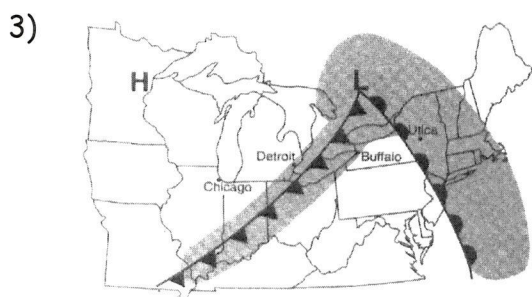
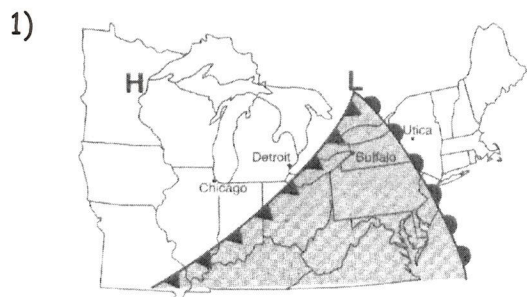
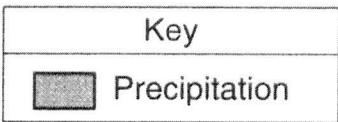
4)



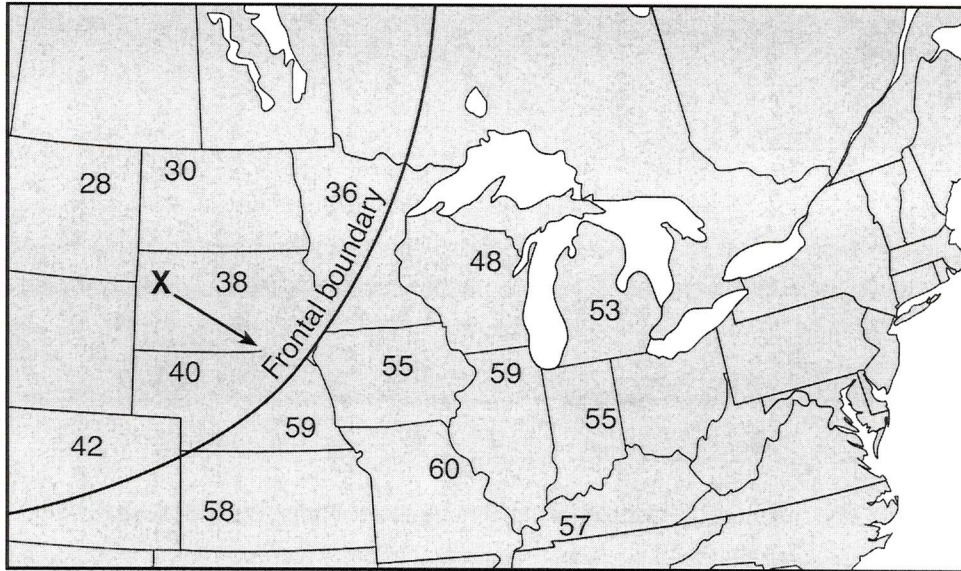
21. Which type of front is located between Buffalo and Detroit?

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

22. Which map best shows the most probable areas of precipitation associated with these weather systems?

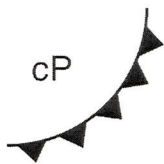


23. The map below shows surface air temperatures, in degrees Fahrenheit, reported by weather stations in the north-central United States. Letter *X* represents an air mass moving in the direction shown by the arrow. A line marks a frontal boundary advancing in a southeasterly direction.

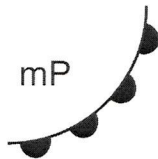


Which weather-map symbols best represent air-mass *X* and the frontal boundary shown on the map?

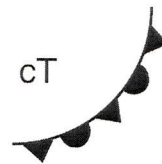
1)



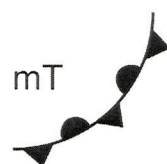
2)



3)

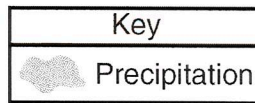
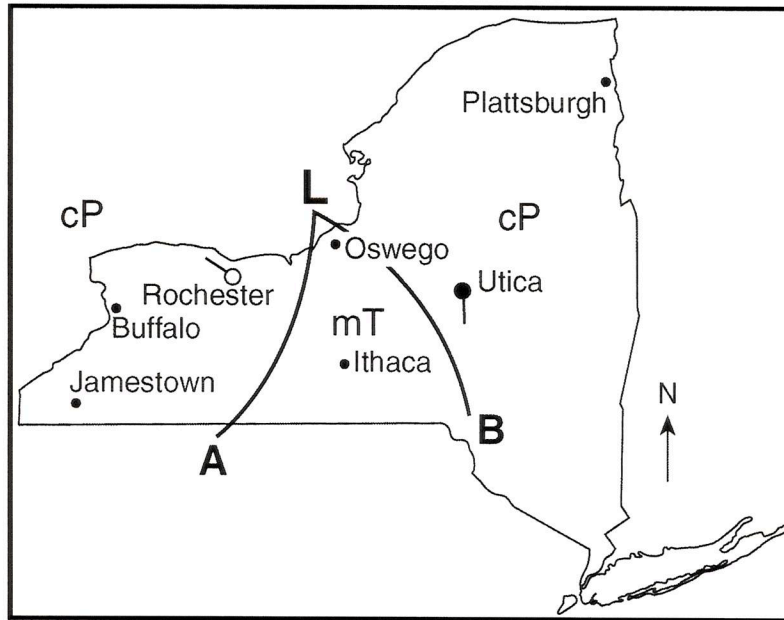


4)





Base your answers to questions 24 through 26 on the weather map below and on your knowledge of Earth science. The weather map shows a typical low-pressure system and associated weather fronts labeled A and B. The L indicates the center of the low-pressure system. A few New York State cities are shown. Symbols cP and mT represent different air masses. The wind direction at Utica and Rochester is shown on the station models.



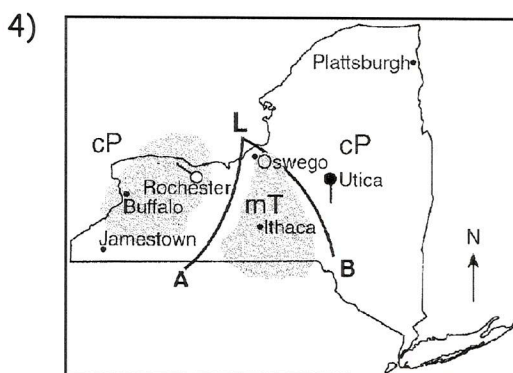
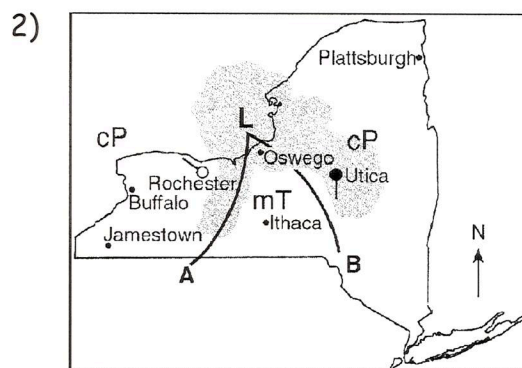
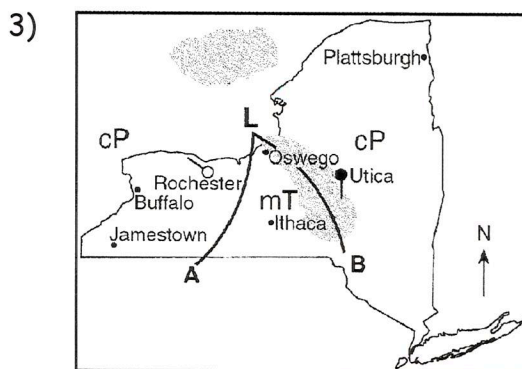
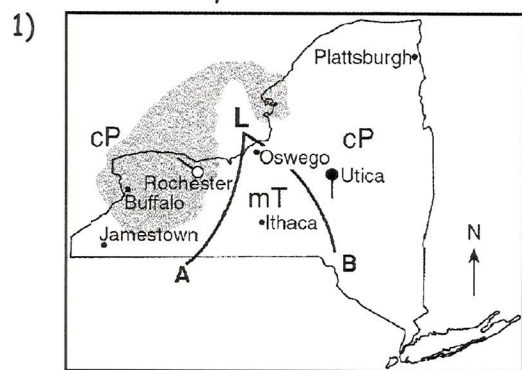
24. If this weather system is following a normal storm track, the center of this low is most likely moving toward which city?

- 1) Buffalo                      2) Ithaca                      3) Utica                      4) Plattsburgh

25. Which front symbols are drawn correctly, based on the air masses shown?

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

26. Which map shows the regions that are most likely experiencing the precipitation associated with this weather system?



**Answer Key**  
**[New Exam]**

1. 1

2. 2

3. 1

4. 2

5. 3

6. 2

7. 3

8. 4

9. 3

10. 1

11. 4

12. 4

13. 1

14. 1

15. 2

16. 1

17. 2

18. 2

19. 1

20. 3

21. 4

22. 3

23. 1

24. 4

25. 2

26. 2