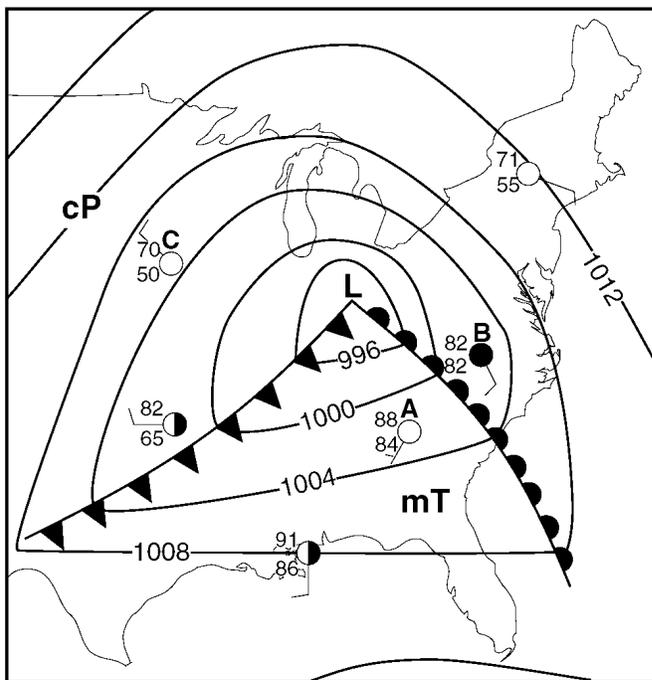
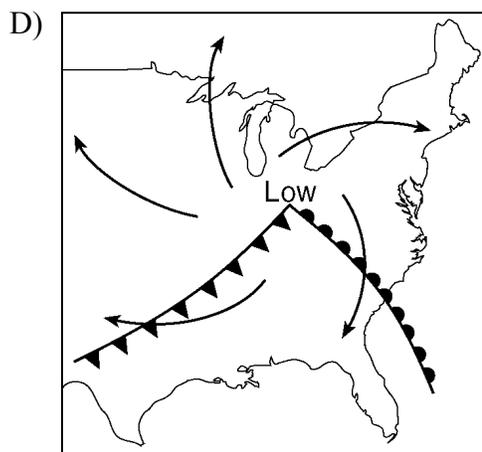
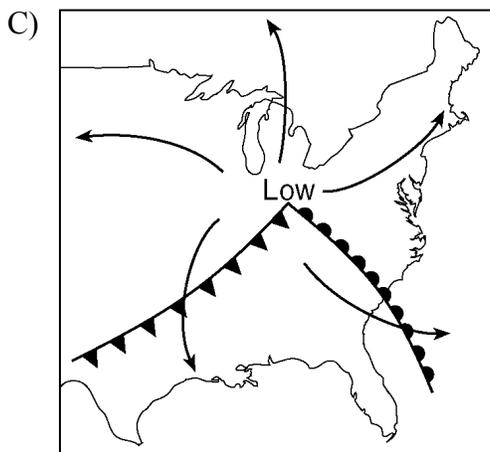
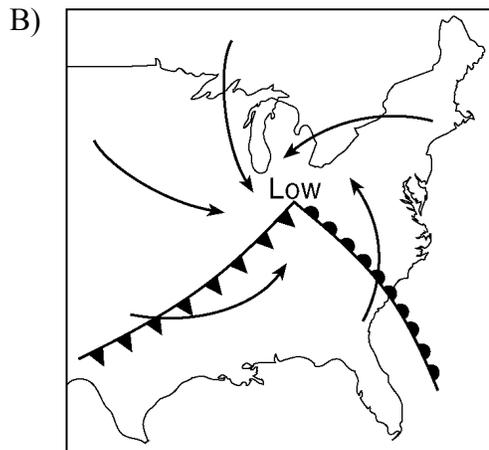
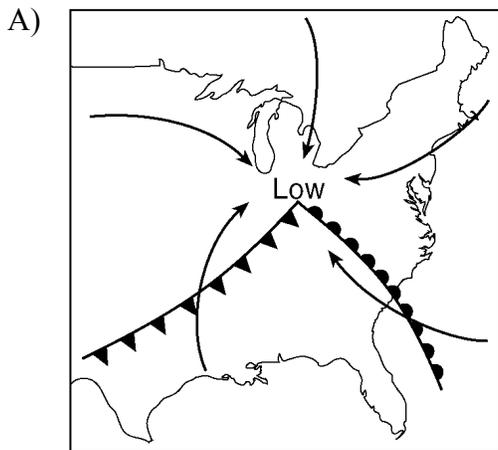


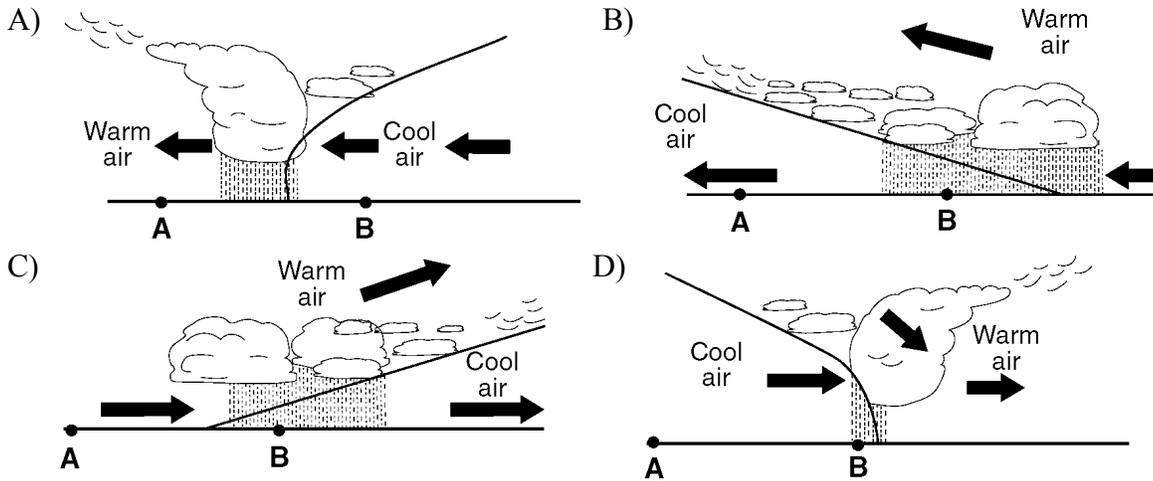
Base your answers to questions 1 through 4 on the weather map below. The map shows a low-pressure system and some atmospheric conditions at weather stations *A*, *B*, and *C*.



1. The arrows on which map best represent the direction of surface winds associated with this low-pressure system?



2. Which cross section best represents the air masses, air movement, clouds, and precipitation occurring behind and ahead of the warm front located between stations A and B?



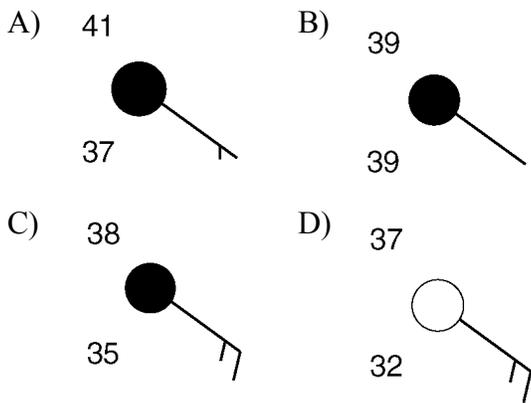
3. Which type of weather is usually associated with a cP air mass, as shown near weather station C?

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

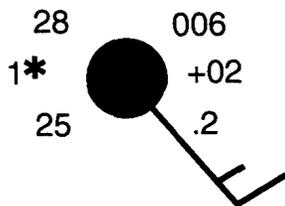
4. If this weather system follows a normal storm track, the low-pressure center (L) will generally move toward the

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

5. Which weather station model shows the highest relative humidity?

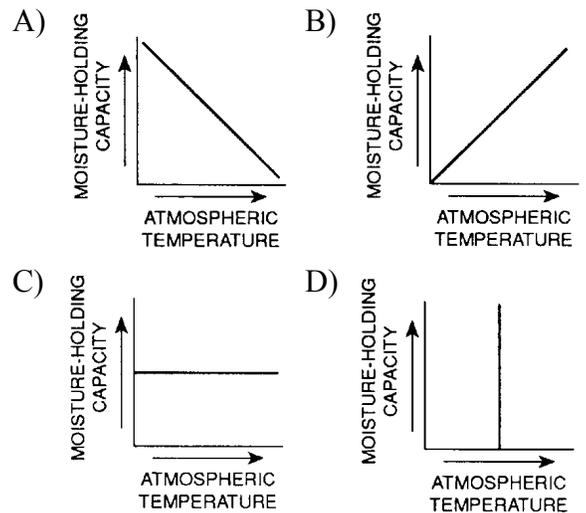


6. What is the air pressure indicated on the weather station model shown below?



- A) 900.6 mb
- B) 960.0 mb
- C) 1000.6 mb
- D) 1006.0 mb

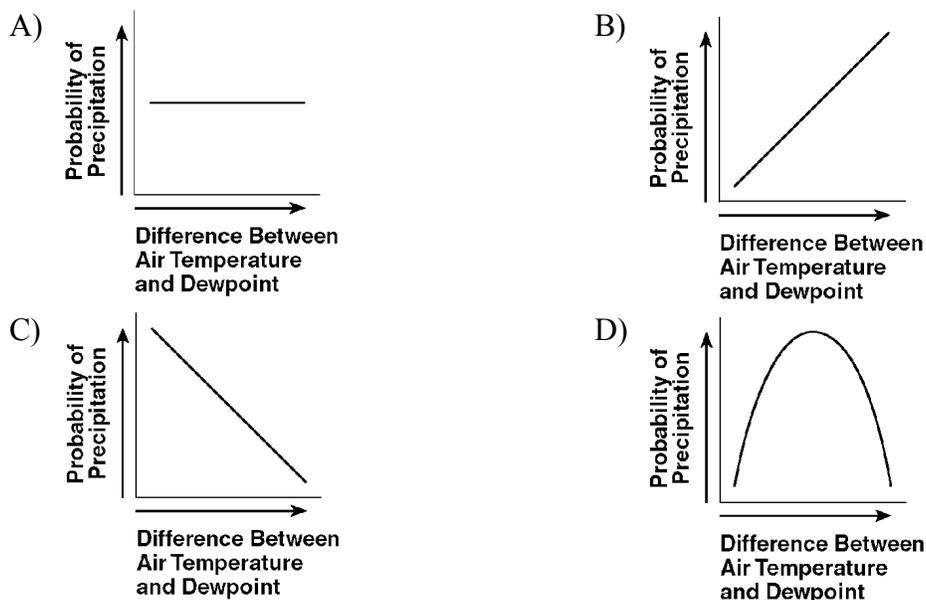
7. Which graph best represents the relationship between the moisture-holding capacity (ability to hold moisture) of the atmosphere and atmospheric temperature?



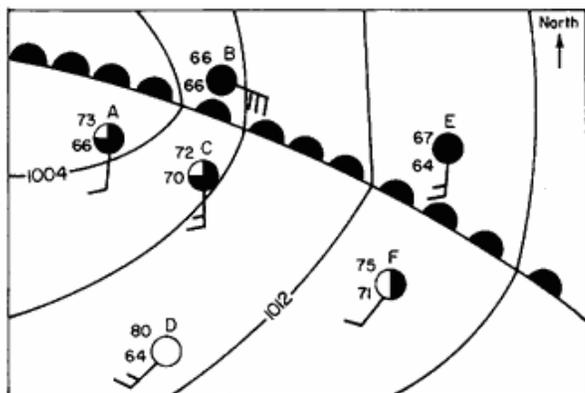
8. Compared to a maritime tropical air mass, a maritime polar air mass has a

- A) higher temperature and more water vapor
- B) higher temperature and less water vapor
- C) lower temperature and more water vapor
- D) lower temperature and less water vapor

9. Which graph best shows the relationship between the probability of precipitation and the difference between air temperature and dewpoint?



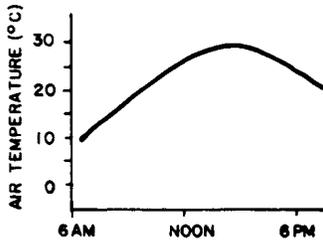
Base your answers to questions 10 through 14 on the map below which represents a section of a surface weather map. Letters A through F represent weather stations.



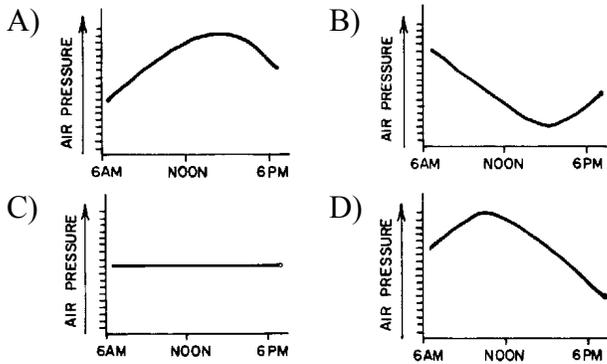
10. At which weather station is the wind speed greatest?  
 A) F    B) B    C) C    D) D
11. The barometric pressure at weather station B is  
 A) 1,000 mb    B) 1,004 mb  
 C) 1,007 mb    D) 1,008 mb
12. In order to test the rate of evaporation, equal amounts of water are exposed to the open air outside each weather station. At which station will the water probably evaporate at the fastest rate?  
 A) A    B) F    C) C    D) D

13. The warm front is moving toward the  
 A) northeast    B) northwest  
 C) southeast    D) southwest
14. Which weather station has the greatest amount of cloud cover?  
 A) A    B) E    C) F    D) D
15. An observer measured the air temperature and the dewpoint and found the difference between them to be 12°C. One hour later, the difference between the air temperature and the dewpoint was found to be 4°C. Which statement best describes the changes that were occurring?  
 A) The relative humidity was decreasing and the chance of precipitation was decreasing.  
 B) The relative humidity was decreasing and the chance of precipitation was increasing.  
 C) The relative humidity was increasing and the chance of precipitation was decreasing.  
 D) The relative humidity was increasing and the chance of precipitation was increasing.
16. Which weather change usually occurs when the difference between the air temperature and the dewpoint temperature is *decreasing*?  
 A) The amount of cloud cover decreases.  
 B) The probability of precipitation decreases.  
 C) The relative humidity increases.  
 D) The barometric pressure increases.

17. The graph below shows air temperature for an area near the Earth's surface during a 12-hour period.



Which graph best illustrates the probable change in air pressure during the same time period?



18. Which type of air mass usually contains the most moisture?

A) mT B) mP C) cT D) cP

19. As warm, moist air moves into a region, barometric pressure readings in the region will generally

A) decrease B) increase  
C) remain the same

20. Under which atmospheric conditions will water most likely evaporate at the fastest rate?

A) hot, humid, and calm  
B) hot, dry, and windy  
C) cold, humid, and windy  
D) cold, dry, and calm

21. Air pressure is usually highest when the air is

A) warm and humid B) warm and dry  
C) cold and humid D) cold and dry

22. Pollutants are most likely to be removed from the atmosphere by

A) evaporation B) precipitation  
C) volcanic activity D) transpiration

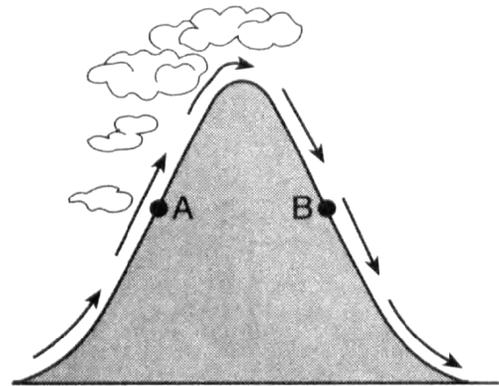
23. The chart below shows the air temperature and the dewpoint temperature near the ground at a given location for four consecutive days. All temperatures were recorded at noon.

Day	Air Temperature (°C)	Dewpoint Temperature (°C)
1	20	11
2	18	17
3	16	14
4	20	13

Which statement is best supported by the data?

- A) Relative humidity was highest on day 1.  
B) The greatest amount of water vapor was in the atmosphere on day 2.  
C) The base level for cloud formation was highest on day 3.  
D) The chance of precipitation was greatest on day 4.

24. The cross section below shows the direction of air flowing over a mountain. Points A and B are at the same elevation on opposite sides of the mountain.



Compared to the air temperature and humidity at point A, the air temperature and humidity at point B are usually

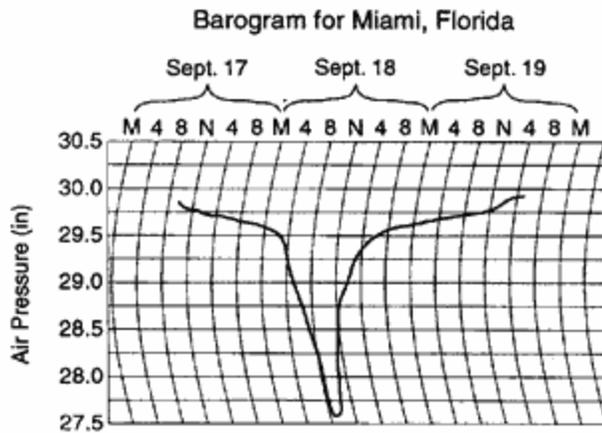
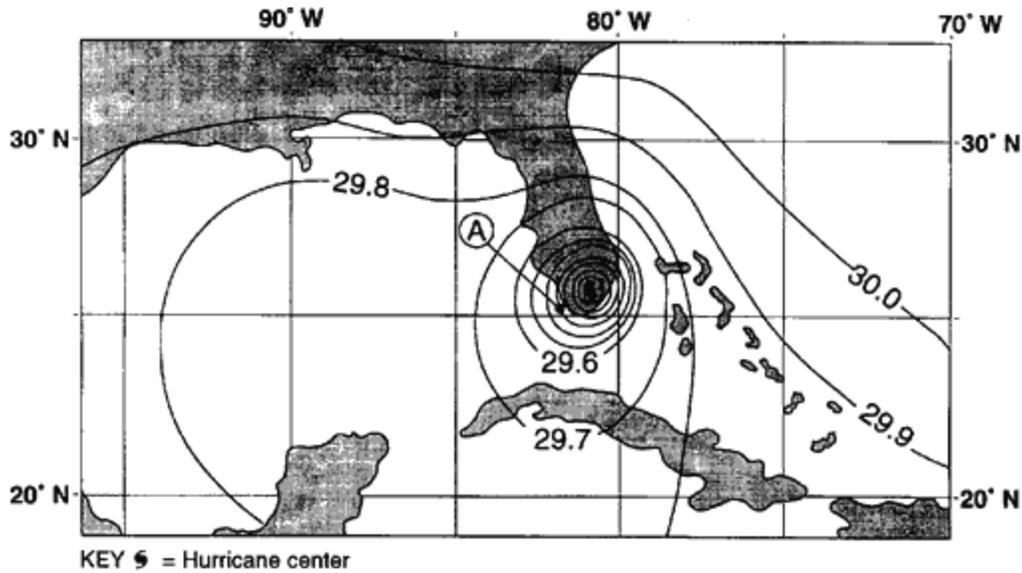
- A) cooler and drier B) cooler and wetter  
C) warmer and drier D) warmer and wetter

25. A student used a sling psychrometer to measure the humidity of the air. If the relative humidity was 65% and the dry-bulb temperature was 10°C, what was the wet-bulb temperature?

A) 5°C B) 7°C  
C) 3°C D) 10°C

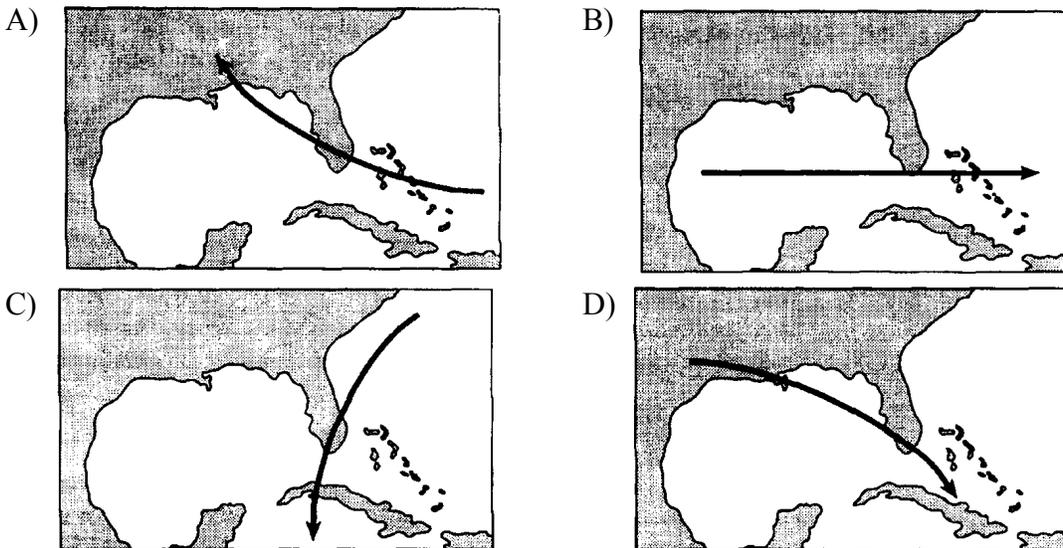
# Regents Review #4

Base your answers to questions 26 through 30 on the weather map and barogram below. The weather map shows a hurricane that was located over southern Florida. The isobars show air pressure in inches of mercury. Letter A represents a point near the west coast of Florida. The barogram shows the recorded air pressure in inches of mercury as the hurricane passed near Miami, Florida.

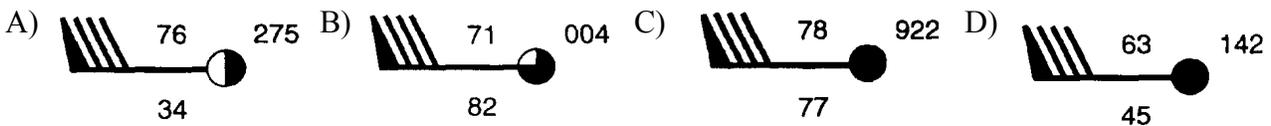


26. What was the lowest air pressure recorded on the barogram as the hurricane passed near Miami?  
 A) 27.30 in      B) 27.60 in      C) 27.75 in      D) 28.60 in
27. What is the latitude and longitude at the center of the hurricane?  
 A) 26° N 81° W      B) 26° N 89° W      C) 34° N 81° W      D) 34° N 89° W

28. Which map shows the most likely track of this hurricane?



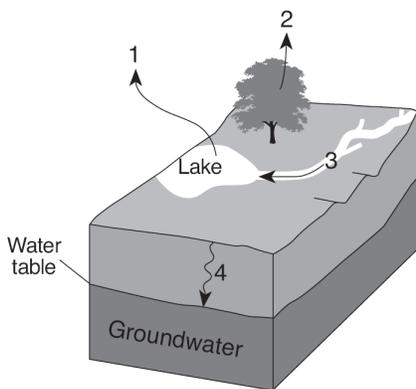
29. Which station model best represents the weather conditions at point A?



30. Which type of air mass would most likely be the source of the moisture that causes the strong winds and heavy rain associated with this hurricane?

- A) cP      B) cT      C) mP      D) mT

31. The arrows in the block diagram below show the movement of water after it has fallen as precipitation.



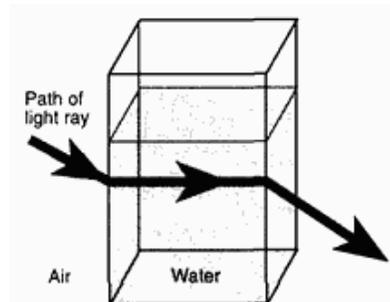
Which arrow indicates the process of transpiration?

- A) 1      B) 2      C) 3      D) 4

32. Air pressure is usually highest when the air is

- A) cool and humid    B) cool and dry  
C) warm and humid    D) warm and dry

33. The diagram below represents the path of visible light as it travels from air to water to air through a glass container of water.



The light did *not* travel in a straight line because of

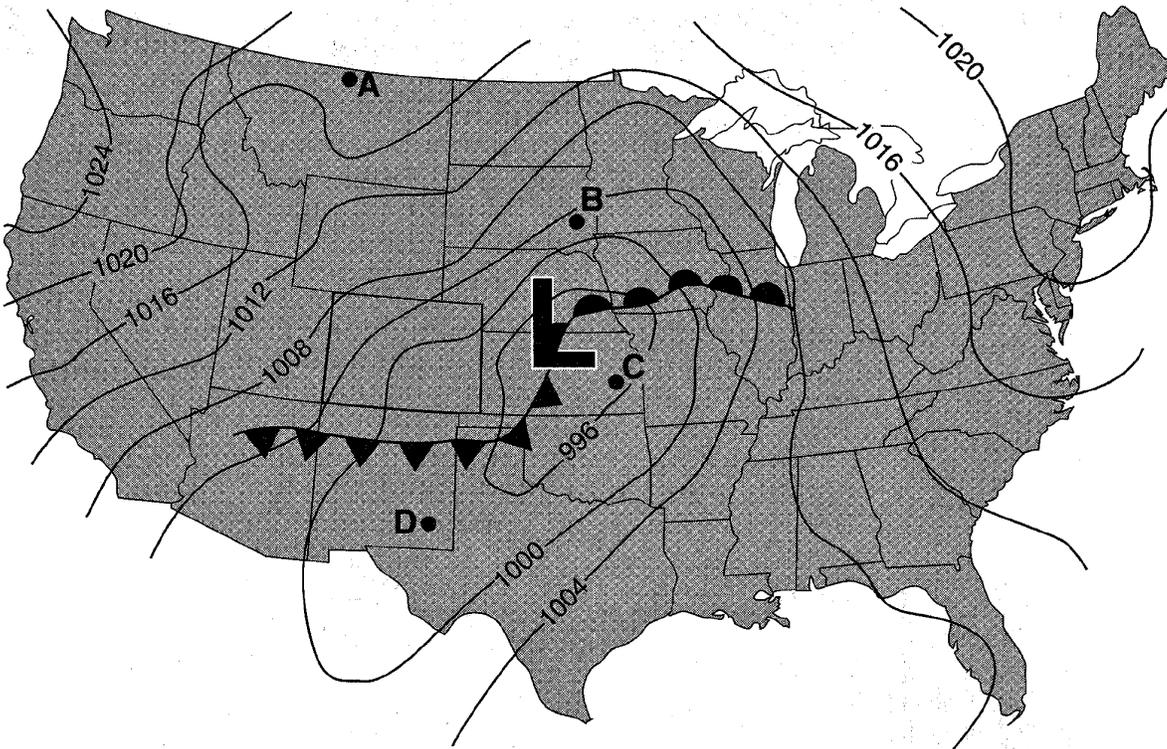
- A) convection      B) scattering  
C) absorption      D) refraction

34. Which weather change is most likely indicated by rapidly falling air pressure?

- A) Humidity is decreasing.  
B) Temperature is decreasing.  
C) Skies are clearing.  
D) A storm is approaching.

# Regents Review #4

Base your answers to questions 35 through 38 on the weather map below, which shows a low-pressure system over the central United States. Isobars are labeled in millibars. Points *A*, *B*, *C*, and *D* represent locations on Earth's surface.



35. Which map shows the most likely path this low-pressure center will follow during the next 12 hours?

A)



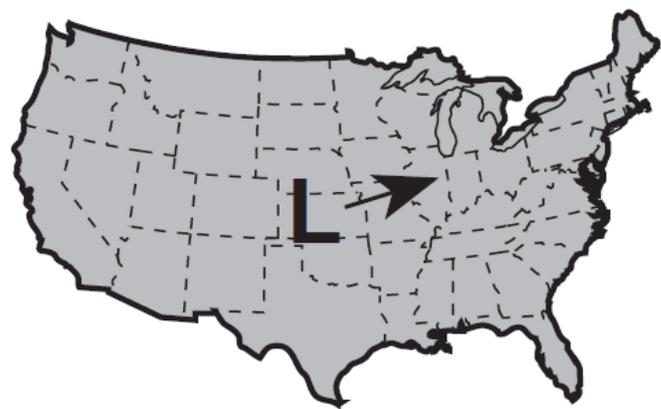
B)



C)



D)



\_\_\_ 36. Which location is most likely experiencing the fastest wind speed?

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

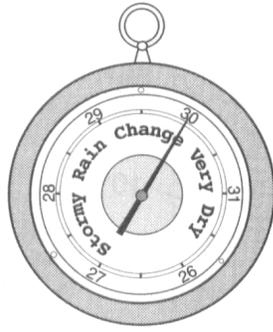
\_\_\_ 37. The circulation of surface winds associated with this low-pressure system is

- A) clockwise and toward the center of the low  
 B) clockwise and away from the center of the low  
 C) counterclockwise and toward the center of the low  
 D) counterclockwise and away from the center of the low

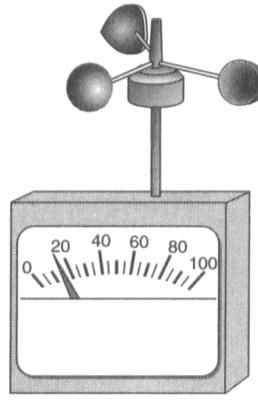
\_\_\_ 38. The air pressure at the center of this low is

- A) 991 mb                      B) 994 mb                      C) 997 mb                      D) 1001 mb

39. The diagram below shows weather instruments *A* and *B*.



A



B

Which table correctly indicates the name of the weather instrument and the weather variable that it measures?

A)

Instrument		Weather Variable Measured
Letter	Name	
A	thermometer	humidity
B	wind vane	wind direction

B)

Instrument		Weather Variable Measured
Letter	Name	
A	thermometer	wind direction
B	wind vane	humidity

C)

Instrument		Weather Variable Measured
Letter	Name	
A	barometer	wind speed
B	anemometer	air pressure

D)

Instrument		Weather Variable Measured
Letter	Name	
A	barometer	air pressure
B	anemometer	wind speed

40. Earth's surface winds generally blow from regions of higher

- A) air temperature toward regions of lower air temperature
- B) air pressure toward regions of lower air pressure
- C) latitudes toward regions of lower latitudes
- D) elevations toward regions of lower elevations

41. Which event usually occurs when air is cooled to its dewpoint temperature?

- A) freezing                      B) evaporation
- C) condensation                D) transpiration

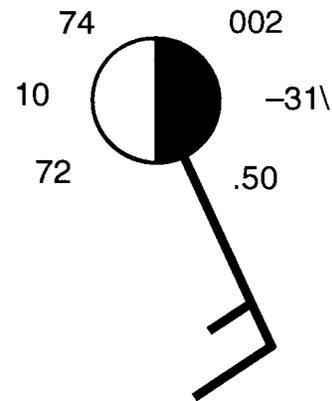
42. At which of these latitudes would average annual precipitation be greatest?

- A) 0°                                B) 30° N
- C) 90° N                            D) 90° S

43. What is the dewpoint if the relative humidity is 100% and the air temperature is 20°C?

- A) 0°C                                B) 10°C
- C) 20°C                                D) 100°C

44. The station model below shows the weather conditions at Houston, Texas, at 9 a.m. on a particular day in June.



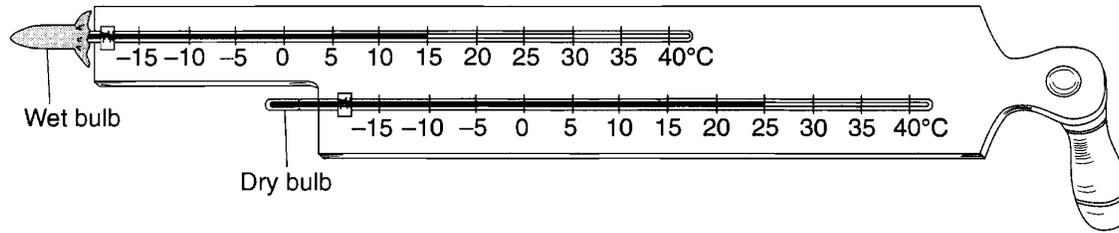
What was the barometric pressure at Houston 3 hours earlier on that day?

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

45. As wind velocity decreases, the distance between isobars on a weather map will

- A) decrease                            B) increase
- C) remain the same

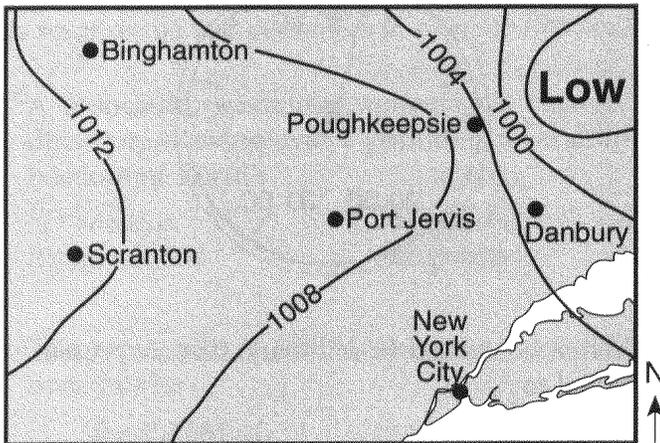
46. The diagram below shows the temperature readings on a weather instrument.



Based on these readings, the relative humidity of the air is closest to

- A) 8%                      B) 11%                      C) 32%                      D) 60%

Base your answers to questions 47 and 48 on the weather map below, which shows a low-pressure system centered near Poughkeepsie, New York. Isobars shown are measured in millibars.



47. Which city is most likely experiencing winds of the greatest velocity?

- A) New York City    B) Binghamton  
C) Poughkeepsie    D) Scranton

48. Surface winds are most likely blowing from

- A) Danbury toward New York City  
B) Poughkeepsie toward Scranton  
C) Binghamton toward Danbury  
D) Port Jervis toward Binghamton

49. The dewpoint changes most directly as a result of changes in the atmosphere's

- A) pressure  
B) wind direction  
C) convection currents  
D) water vapor content

50. Which map view best represents the pattern of isobar values, in millibars, and the pattern of wind flow, shown by arrows, at Earth's surface surrounding a Northern Hemisphere low-pressure center?

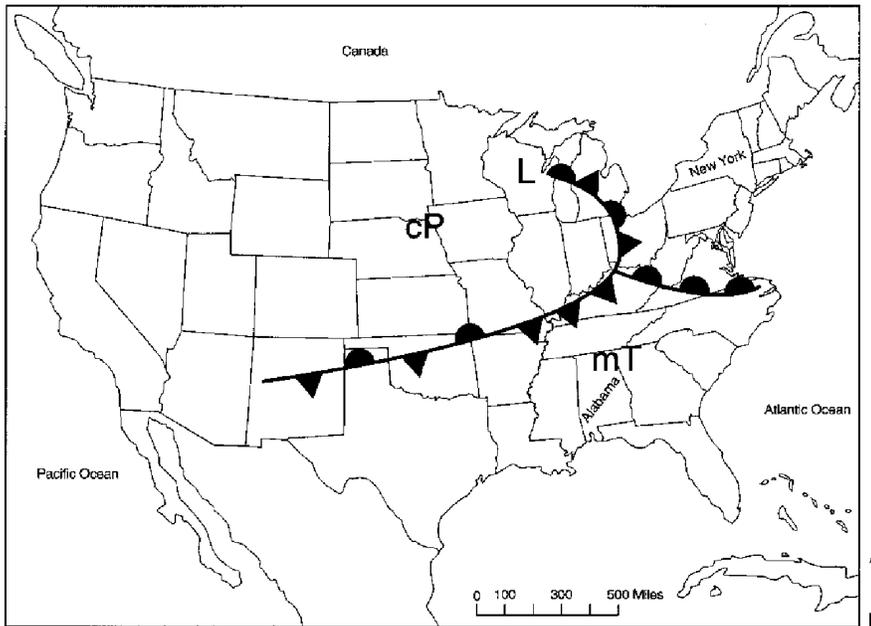
- A)
- B)
- C)
- D)

51. A temperature of 104°F is approximately equal to

- A) 220°C                      B) 214°C  
C) 43°C                        D) 40°C

# Regents Review #4

Base your answers to questions 52 through 56 on the weather map below, which shows a weather system that is affecting part of the United States.



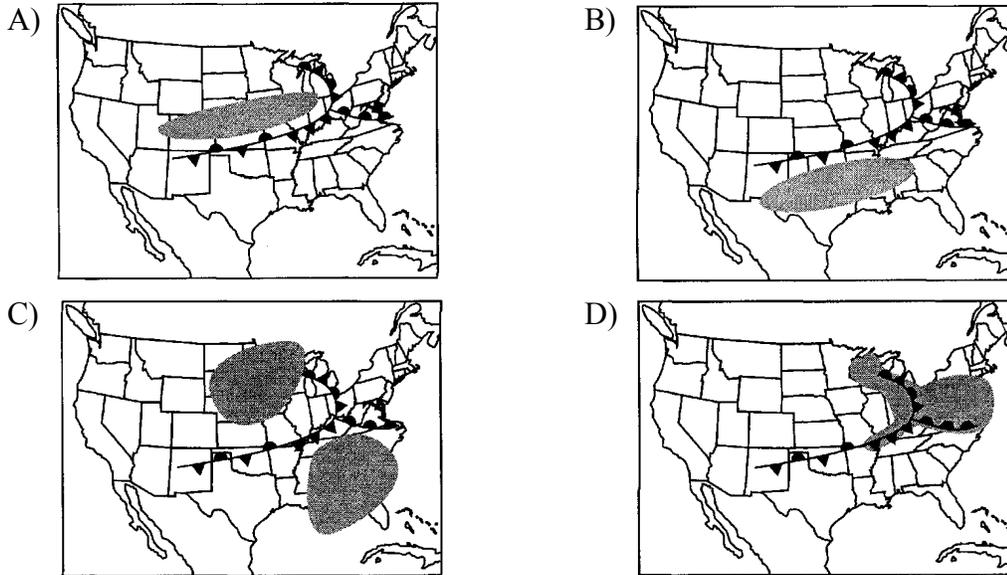
52. Which sequence of events forms the clouds associated with this weather system?
- A) Moist air rises and becomes saturated in clean air.
  - B) Moist air rises, becomes saturated, and condenses on microscopic particles.
  - C) Moist air falls and reaches the dewpoint in clean air.
  - D) Moist air falls, reaches the dewpoint, and condenses on microscopic particles.
53. What is the total number of different kinds of weather fronts shown on this weather map?
- A) 1
  - B) 2
  - C) 3
  - D) 4
54. Which diagram shows the surface air movements most likely associated with the fronts?
- A)

B)

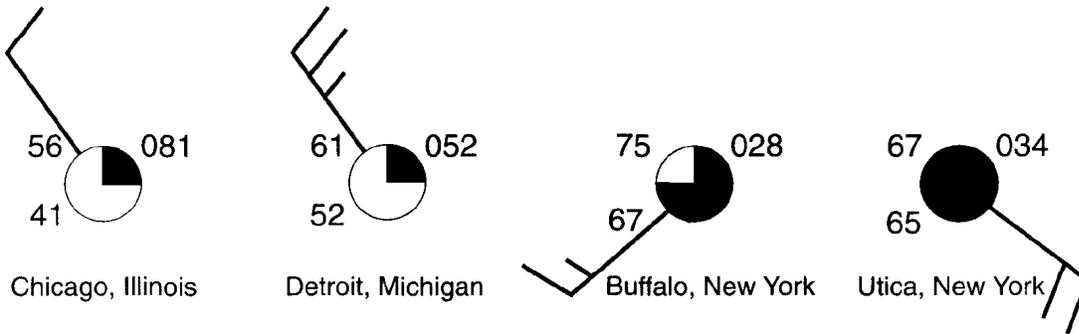
C)

D)
55. Compared to the air over most of the map region, the air mass centered over Alabama is
- A) warmer and more humid
  - B) warmer and drier
  - C) colder and more humid
  - D) colder and drier

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



Base your answers to questions 57 through 60 on the station models below, which show various weather conditions recorded at the same time on the same day at four different cities.



57. Which weather symbol best represents the type of precipitation that was most likely occurring in Utica?

- A) \*      B) ~      C) ▲      D) ▼

58. Which wind speed was recorded at Detroit?

- A) 15 knots      B) 25 knots      C) 35 knots      D) 45 knots

59. Which city had the lowest relative humidity?

- A) Chicago      B) Detroit      C) Buffalo      D) Utica

60. What barometric pressure was recorded in Buffalo?

- A) 902.8 mb      B) 902.8 inches of mercury  
C) 1002.8 mb      D) 1002.8 inches of mercury

61. If a low-pressure system follows a typical storm track across New York State, it will move toward the

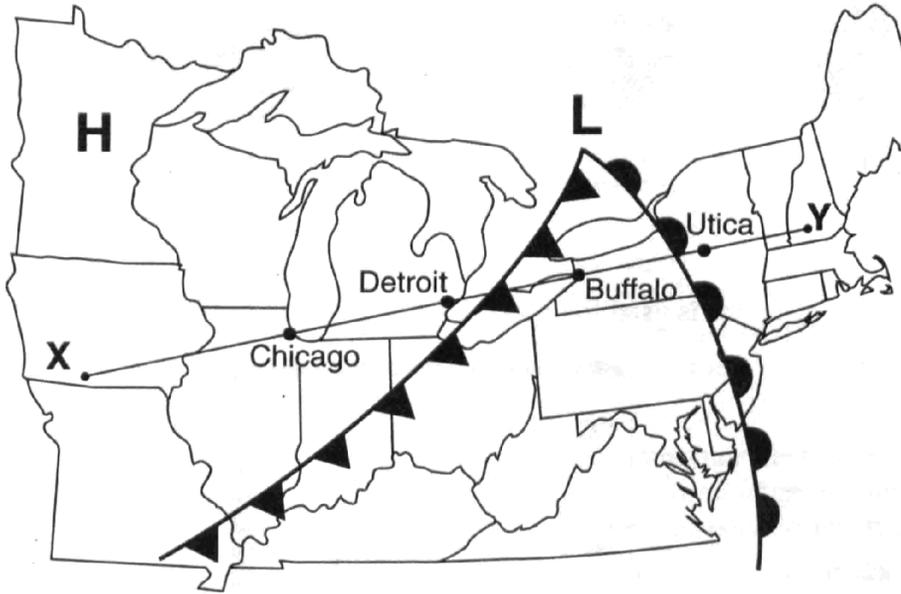
- A) southeast      B) southwest  
C) northeast      D) northwest

62. What is the dewpoint when the dry-bulb temperature is 24°C and the wet-bulb temperature is 21°C?

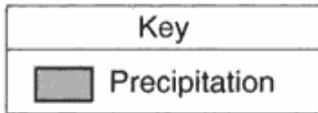
- A) 16°C      B) 18°C  
C) 20°C      D) 21°C

# Regents Review #4

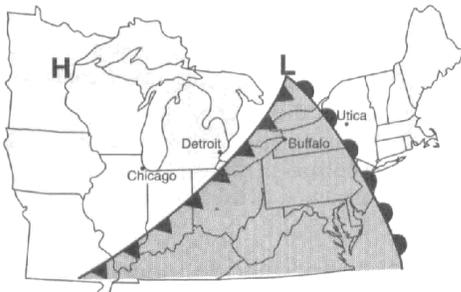
Base your answers to questions 63 and 64 on the weather map below, which shows a high-pressure center (H) and a low-pressure center (L), with two fronts extending from the low-pressure center. Points X and Y are locations on the map connected by a reference line.



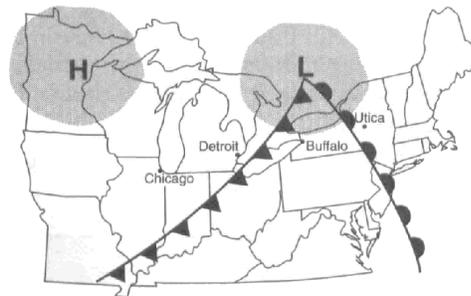
63. Which map best shows the most probable areas of precipitation associated with these weather systems?



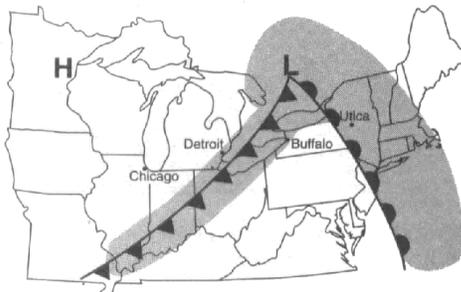
A)



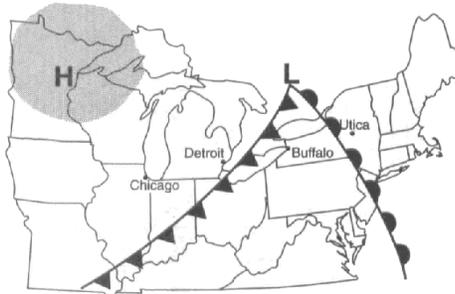
B)



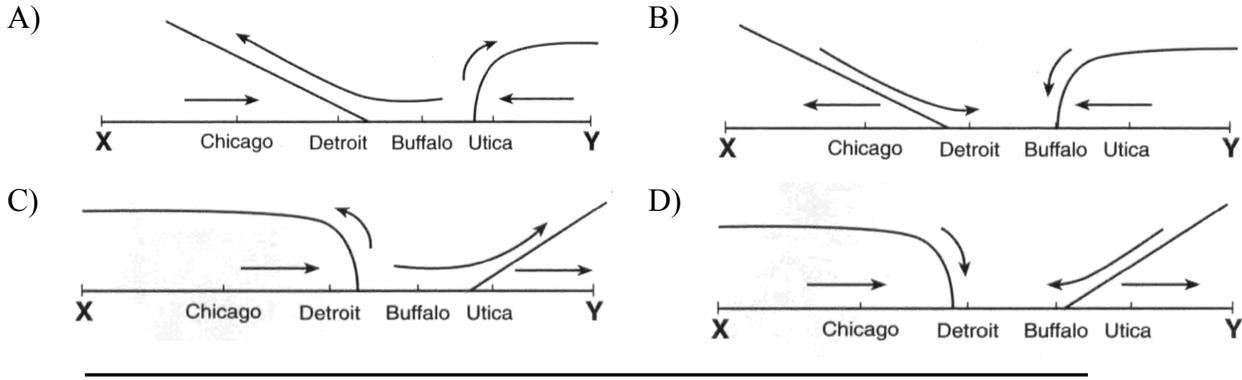
C)



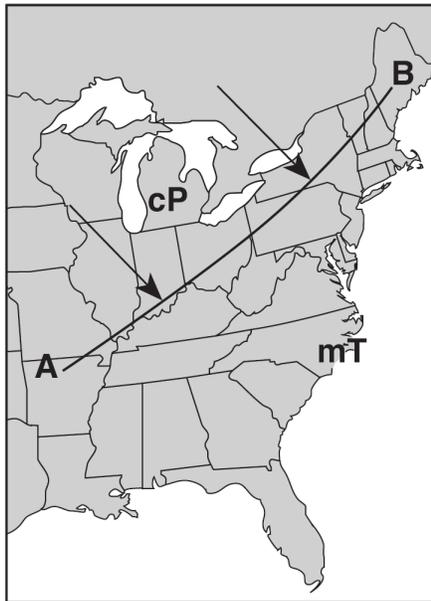
D)



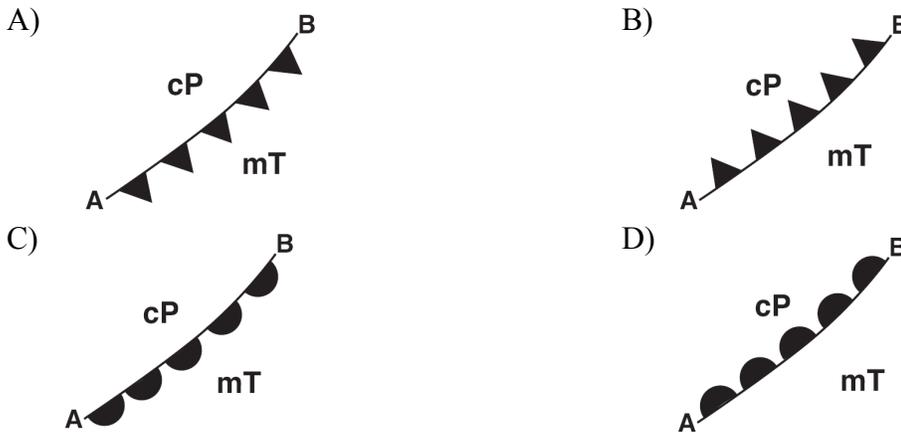
64. Which cross section best represents the fronts and air movements in the lower atmosphere along line *XY*?



65. The weather map below shows a portion of the United States. Line *AB* represents a frontal boundary between two air masses. The two large arrows indicate the direction that a cP air mass is moving.



Which symbol correctly represents the frontal boundary at line *AB*?



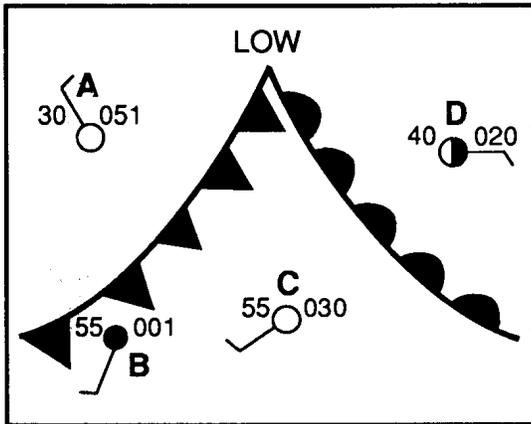
66. An air pressure of 1,005 millibars is equivalent to approximately how many inches of mercury?

- A) 29.58
- B) 29.62
- C) 29.68
- D) 29.72

67. What is the dewpoint when the air temperature is 26°C and the relative humidity is 77%?

- A) 3°C
- B) 20°C
- C) 22°C
- D) 23°C

68. The map below represents a section of a weather map for locations in the eastern United States. The map shows a low-pressure system, fronts, and weather stations *A*, *B*, *C*, and *D*.



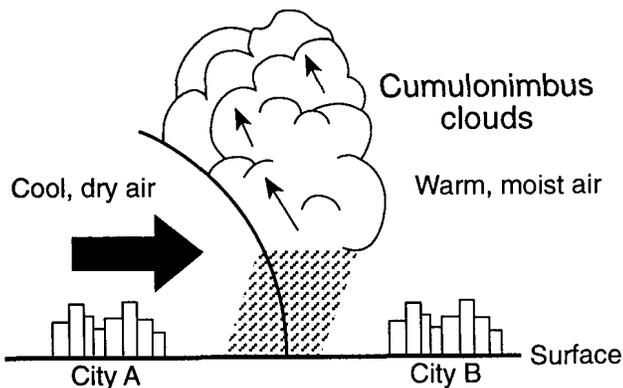
At which weather station are weather conditions probably most *unstable*?

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

69. An Earth science student observed the following weather conditions in Albany, New York, for 2 days: The first day was warm and humid with southerly winds. The second day, the temperature was 15 degrees cooler, the relative humidity had decreased, and wind direction was northwest. Which type of air mass most likely had moved into the area on the second day?

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

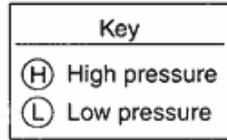
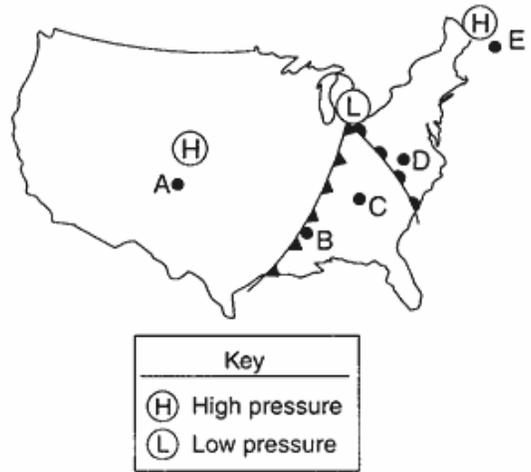
70. The cross section below shows a weather front. The large arrow shows the direction of the movement of the cool air mass.



Which type of weather front is shown?

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

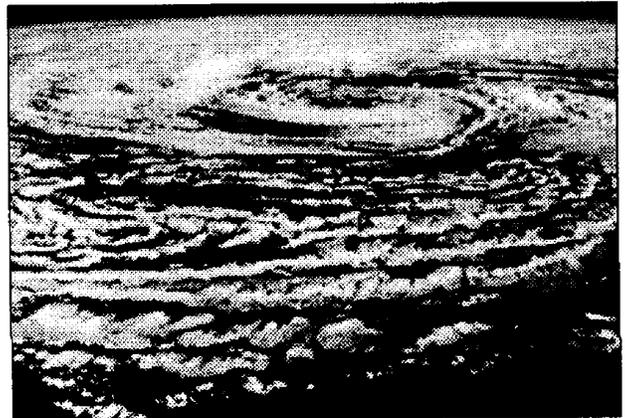
71. The map below shows high-pressure and low-pressure weather systems in the United States.



Which two lettered positions on the map are most likely receiving precipitation?

- A) *A* and *B*                      B) *B* and *D*  
 C) *C* and *E*                      D) *A* and *D*

72. The satellite photograph below shows a Northern Hemisphere cloud pattern.



The center of this cloud pattern is most likely the center of a

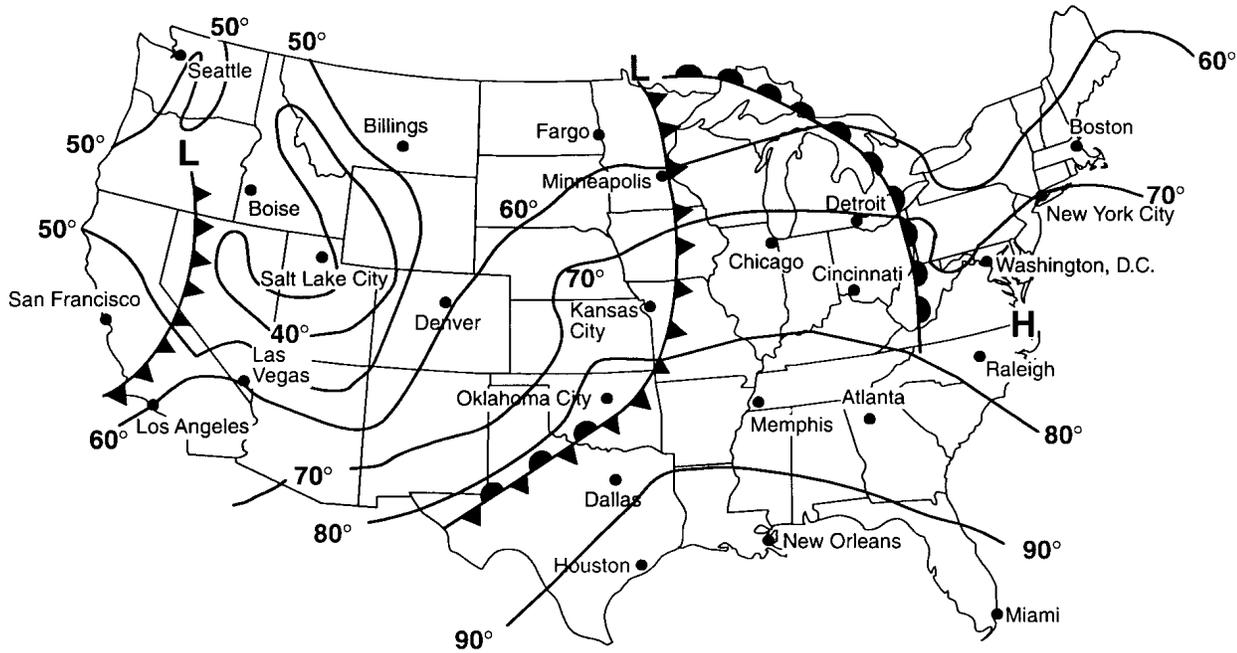
- A) cold, dry air mass  
 B) warm, dry air mass  
 C) low-pressure system  
 D) high-pressure system

73. A container of water is placed in an open outdoor area so that the evaporation rate can be observed. The water will most likely evaporate fastest when the weather is

- A) cool, humid, and windy  
 B) cool, dry, and calm  
 C) warm, humid, and calm  
 D) warm, dry, and windy

# Regents Review #4

Base your answers to questions 74 and 75 on the weather map below, which shows the location of fronts and the temperature field on a given day in the United States.

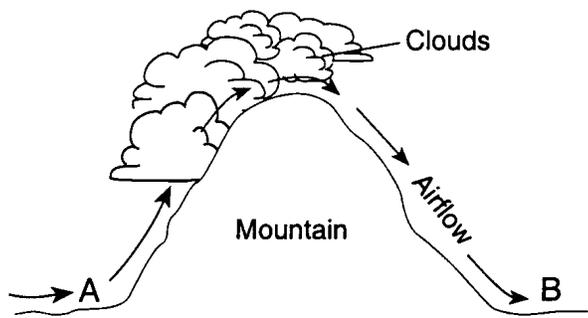


74. Which two cities most likely have an air temperature closest to 75°F?
- A) Chicago and Detroit  
 B) Los Angeles and Denver  
 C) Oklahoma City and Memphis  
 D) Cincinnati and Kansas City
75. The passage of a cold front most recently influenced the weather of which two cities?
- A) Chicago and Boise  
 B) Las Vegas and Salt Lake City  
 C) Kansas City and Minneapolis  
 D) Detroit and Cincinnati

76. Which station model correctly represents the weather conditions in an area that is experiencing winds from the northeast at 25 knots and has had a steady drop in barometric pressure of 2.7 millibars during the last three hours?

- A)
- B)
- C)
- D)

Base your answers to questions 77 and 78 on the diagram of a mountain shown below. The arrows represent the direction of airflow over the mountain.



77. As the air moves up the windward side of the mountain, the air

- A) compresses and warms
- B) compresses and cools
- C) expands and warms
- D) expands and cools

78. Compared to the temperature and humidity conditions at location A, the conditions at location B are

- A) warmer and less humid
- B) warmer and more humid
- C) cooler and less humid
- D) cooler and more humid

79. 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.

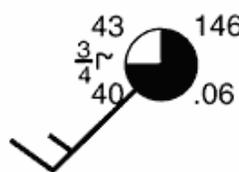
80. When a person leaves the ocean after swimming on a windy day, the person usually feels cold because

- A) water evaporates from the skin
- B) water condenses on the skin
- C) salt is absorbed through the skin
- D) radiation is absorbed through the skin

81. Which statement best explains why an increase in the relative humidity of a parcel of air generally increases the chance of precipitation?

- A) The dewpoint is farther from the condensation point, causing rain.
- B) The air temperature is closer to the dewpoint, making cloud formation more likely.
- C) The amount of moisture in the air is greater, making the air heavier.
- D) The specific heat of the moist air is greater than the drier air, releasing energy.

82. Various weather conditions at LAX Airport in Los Angeles are shown on the station model below.



What were the barometric pressure and weather conditions at the airport at the time of the observation?

- A) 914.6 mb of pressure and smog
- B) 914.6 mb of pressure and a clear sky
- C) 1014.6 mb of pressure and smog
- D) 1014.6 mb of pressure and a clear sky

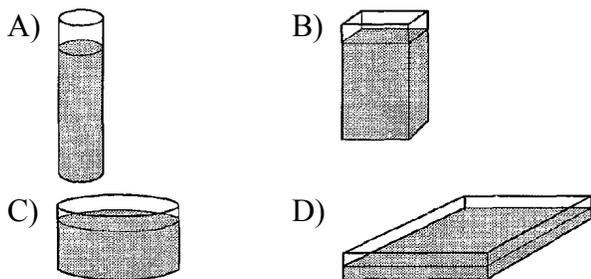
83. As a weather balloon released from the surface of Earth rises through the troposphere, the instruments it carries will usually indicate that

- A) temperature, atmospheric pressure, and concentration of water vapor decrease
- B) temperature decreases, but atmospheric pressure and concentration of water vapor increase
- C) temperature increases, but atmospheric pressure and concentration of water vapor decrease
- D) temperature, atmospheric pressure, and concentration of water vapor increase

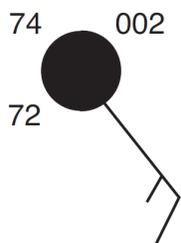
84. Daily weather forecasts are based primarily on

- A) ocean currents
- B) seismic data
- C) phases of the Moon
- D) air-mass movements

85. All of the containers shown below contain the same volume of water and are at room temperature. In a two-day period, from which container will the *least* amount of water evaporate?



86. What are the dewpoint and wind direction shown on the station model below?



- A) 72°F and wind from the northeast
- B) 72°F and wind from the southeast
- C) 74°F and wind from the northwest
- D) 74°F and wind from the southwest

87. Which event is a direct result of transpiration and evaporation?

- A) The atmosphere warms.
- B) Cloud cover decreases.
- C) Moisture enters the atmosphere.
- D) Moisture leaves the atmosphere.

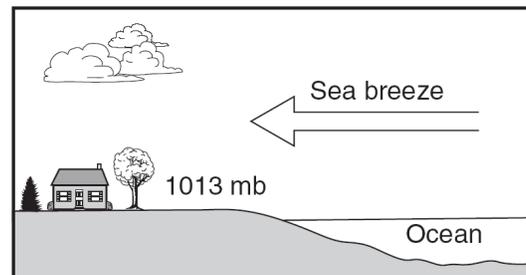
88. Under which conditions is a cloud most likely to form at the Earth's surface?

- A) The air temperature is above the dewpoint, and no condensation nuclei are present.
- B) The air temperature is at the dewpoint, and condensation nuclei are abundant.
- C) The relative humidity is zero, and condensation nuclei are abundant.
- D) The air temperature and air pressure are stable, and condensation nuclei are scarce.

89. Which air mass is associated with low relative humidity and high air temperature?

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

90. The cross section below shows a sea breeze blowing from the ocean toward the land. The air pressure at the land surface is 1013 millibars.



(Not drawn to scale)

The air pressure at the ocean surface a few miles from the shore is most likely

- A) 994 mb
- B) 1005 mb
- C) 1013 mb
- D) 1017 mb

91. The heavy lake-effect snowfalls in the Tug Hill Plateau region occur primarily because the plateau is located

- A) in the path of prevailing winds from Lake Ontario
- B) in the Northern Hemisphere
- C) near the Atlantic Ocean
- D) west of the Hudson-Mohawk Lowlands

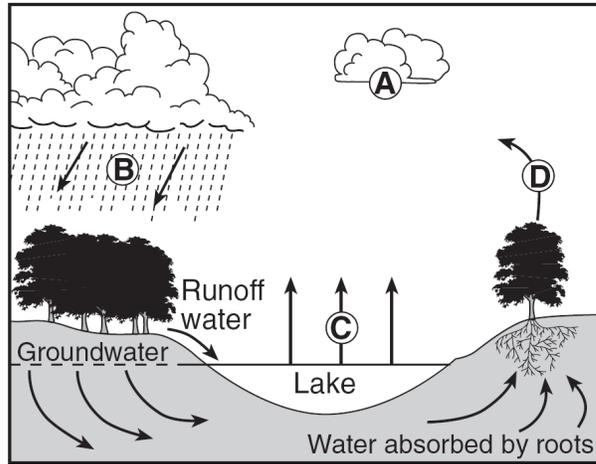
92. The weather characteristics of air mass result primarily from its

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

93. What is the difference between the dry-bulb temperature and the wet-bulb temperature when the relative humidity is 28% and the dry-bulb temperature is 0°C?

- A) 11°C
- B) 2°C
- C) 28°C
- D) 4°C

94. The letters *A* through *D* in the cross section below represent four of the processes that are part of the water cycle.



Which table correctly matches each letter with the process that it represents

A)

Letter	Process
A	condensation
B	precipitation
C	transpiration
D	evaporation

B)

Letter	Process
A	evaporation
B	condensation
C	precipitation
D	transpiration

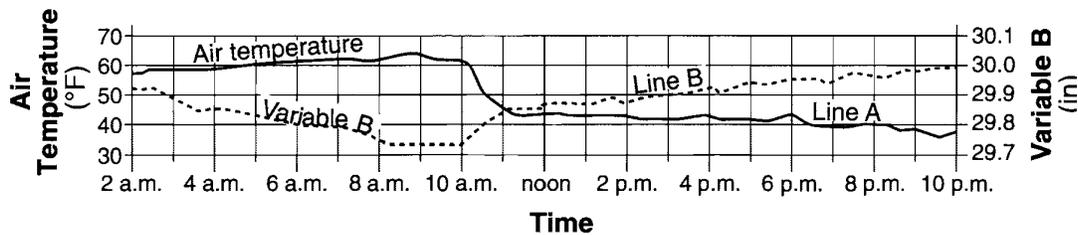
C)

Letter	Process
A	transpiration
B	precipitation
C	evaporation
D	condensation

D)

Letter	Process
A	condensation
B	precipitation
C	evaporation
D	transpiration

95. Data from two weather instruments have been recorded on the graph below. Line *A* on the graph represents air-temperature data. Line *B* was plotted using the scale for variable *B*.



Line *B* on the graph represents data from which weather instrument?

- A) thermometer    B) barometer    C) psychrometer    D) anemometer

96. Compared to a maritime tropical air mass, a continental polar air mass is

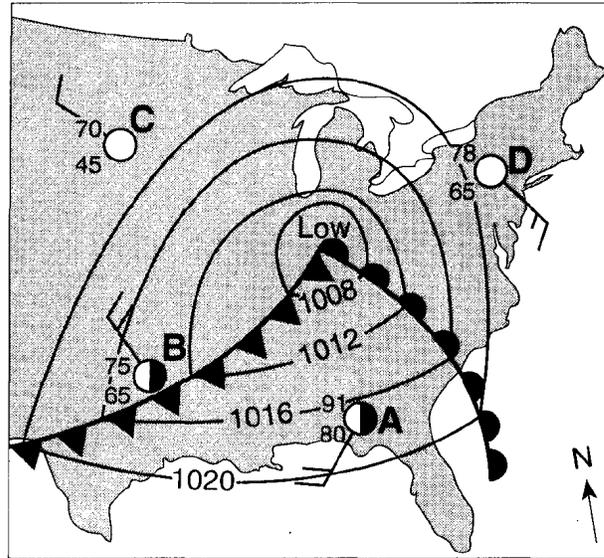
- A) cooler and contains less moisture  
 B) cooler and contains more moisture  
 C) warmer and contains less moisture  
 D) warmer and contains more moisture

97. What is the relative humidity when the dry-bulb temperature is 16°C and the wet-bulb temperature is 14°C?

- A) 90%    B) 80%    C) 14%    D) 13%

# Regents Review #4

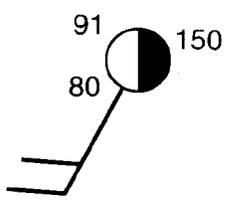
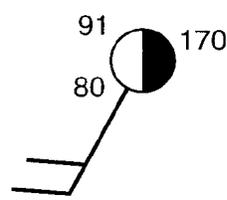
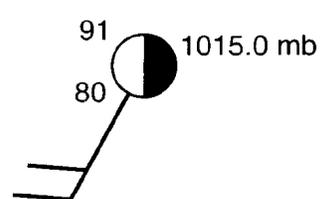
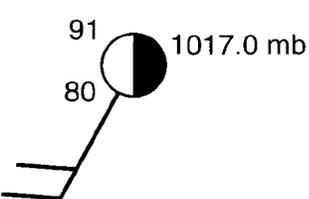
Base your answers to questions 98 through 100 on the weather map below, which shows a low-pressure system over the eastern United States. Letters *A* through *D* represent weather stations.



98. Surface winds within this low-pressure system most likely are flowing

- A) toward the center in a clockwise pattern
- B) toward the center in a counterclockwise pattern
- C) away from the center in a clockwise pattern
- D) away from the center in a counterclockwise pattern

99. Which station model correctly represents the barometric pressure at station *A*?

- |   |  |
|---|--|
| <p>A) </p> | <p>B) </p> |
| <p>C) </p> | <p>D) </p> |

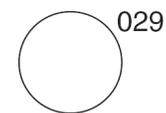
100. Which weather instrument was used to measure wind speed at station *D*?

- A) barometer
- B) thermometer
- C) psychrometer
- D) anemometer

101. Weather-station measurements indicate that the dewpoint temperature and air temperature are getting farther apart and that air pressure is rising. Which type of weather is most likely arriving at the station?

- A) a snowstorm
- B) a warm front
- C) cool, dry air
- D) maritime tropical air

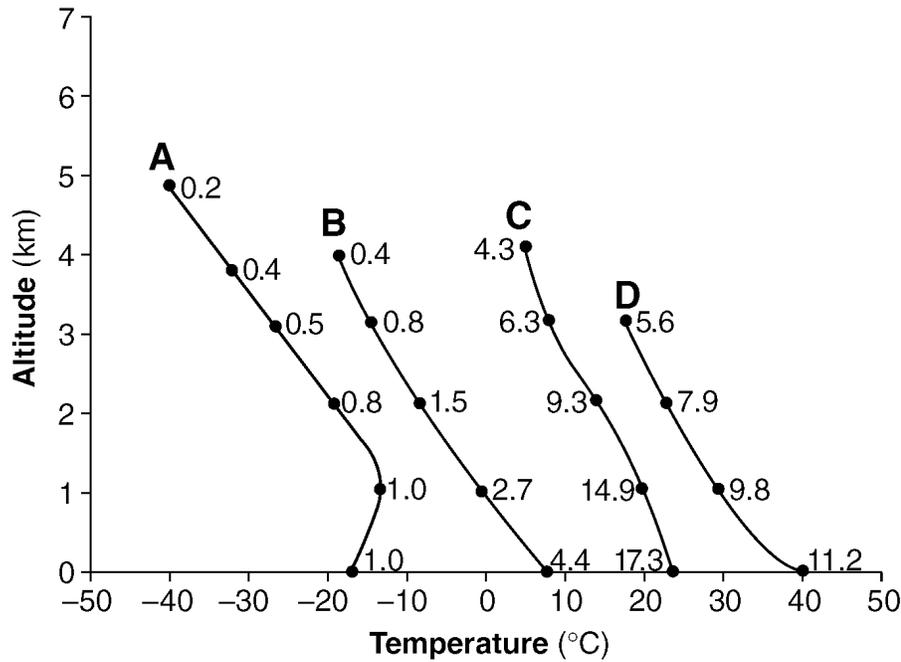
102. A weather station model is shown below.



What is the barometric pressure indicated by this station model?

- A) 0.029 mb
- B) 902.9 mb
- C) 1002.9 mb
- D) 1029.0 mb

103. The graph below shows changes in the atmosphere occurring above typical air-mass source regions *A*, *B*, *C*, and *D*. Changes in air temperature and altitude are shown as the graphed lines. Changes in water-vapor content, in grams of vapor per kilogram of air, are shown as numbers on each graphed line.



Which list best identifies each air-mass source region?

- A) *A* — cT, *B* — cP, *C* — mP, *D* — mT      B) *A* — cP, *B* — mP, *C* — mT, *D* — cT  
 C) *A* — mP, *B* — mT, *C* — cT, *D* — cP      D) *A* — mT, *B* — cT, *C* — cP, *D* — mP

104. Which cross section below best shows the locations of high air pressure and low air pressure near a beach on a hot, sunny, summer afternoon?

Key	
<b>H</b>	High air pressure
<b>L</b>	Low air pressure

- A) B) C) D)

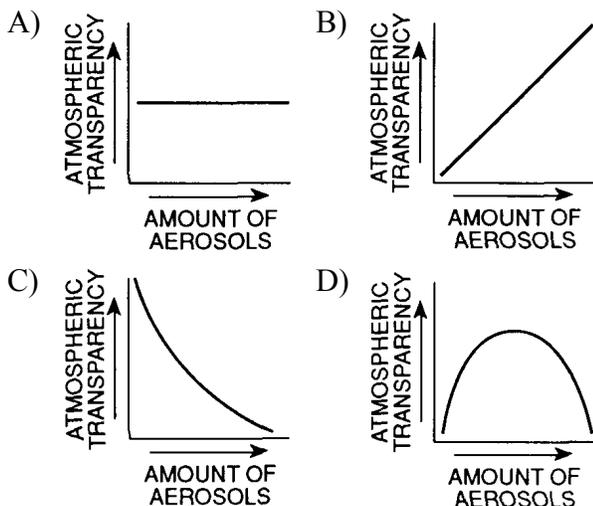
105. A large rainstorm follows the usual direction of movement of a weather system across the United States. Which part of New York State will receive rain from the storm first?

- A) northwestern      B) northeastern  
 C) southwestern      D) southeastern

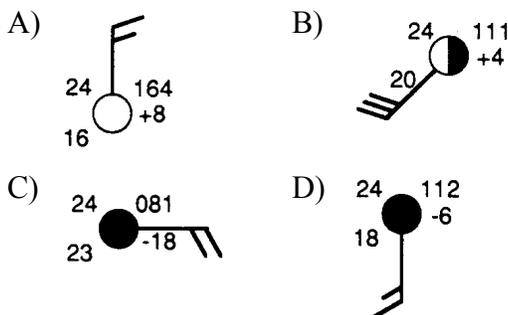
106. Tornadoes occur when a very cold, dry air mass meets a very warm, wet air mass. Which two air masses would most likely form a tornado when they meet?

- A) cP and cA      B) cT and mP  
 C) cP and mT      D) mP and mT

107. Which graph best shows the relationship between transparency of the atmosphere and the amount of aerosols (tiny particles) put into the atmosphere?



108. Which weather station model indicates the greatest probability of precipitation?



109. In a certain area the air temperature and the dewpoint temperature are approaching the same value. The air pressure is decreasing and the cloud cover is increasing. What atmospheric change is most likely occurring in this area?

- A) Warm, moist air is moving into the area.
- B) Warm, dry air is moving into the area.
- C) Cold, dry air is moving into the area.
- D) A cold front has just passed through this area.

110. The air over the Equator generally rises because the air is

- A) dry and cool with low density
- B) moist and hot with low density
- C) moist and cool with high density
- D) dry and hot with high density

111. Weather along most fronts is usually cloudy with precipitation because the warm air along most fronts is usually

- A) sinking and cooling, causing water to evaporate
- B) sinking and warming, causing water to evaporate
- C) rising and cooling, causing water vapor to condense
- D) rising and warming, causing water vapor to condense

112. The highest surface wind speeds occur when there is a

- A) 4-millibar air-pressure difference between two nearby locations
- B) 4-millibar air-pressure difference between two distant locations
- C) 20-millibar air-pressure difference between two nearby locations
- D) 20-millibar air-pressure difference between two distant locations

113. The surface winds in a typical Northern Hemisphere high-pressure system are generally moving

- A) counterclockwise away from the high-pressure center
- B) counterclockwise toward the high-pressure center
- C) clockwise away from the high-pressure center
- D) clockwise toward the high-pressure center

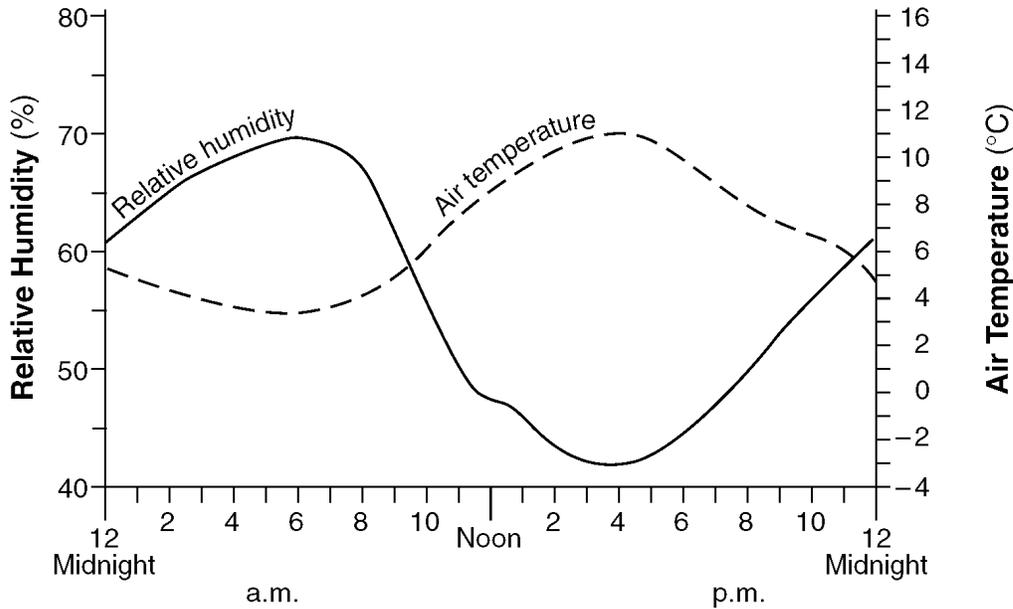
114. Which statement best explains how atmospheric dust particles influence the water cycle?

- A) Dust particles are the main source of dissolved salts in the sea.
- B) Dust particles increase the capacity of the atmosphere to hold water vapor.
- C) Dust particles increase the amount of evaporation that takes place.
- D) Dust particles provide surfaces on which water vapor can condense.

115. A temperature of 73° Fahrenheit is approximately equal to a temperature of

- A) 17° Celsius
- B) 23° Celsius
- C) 26° Celsius
- D) 162° Celsius

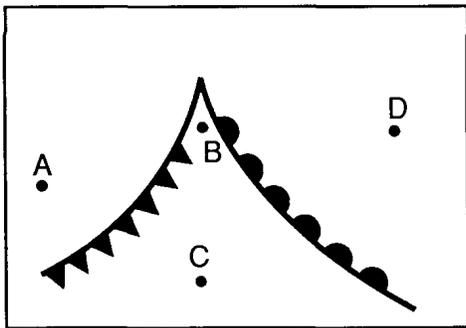
116. Base your answer to the following question on the graph below, which shows the changes in relative humidity and air temperature during a spring day in Washington, D.C.



Which statement best describes the relationship between relative humidity and air temperature as shown by the graph?

- A) Relative humidity decreases as air temperature decreases.
- B) Relative humidity decreases as air temperature increases.
- C) Relative humidity increases as air temperature increases.
- D) Relative humidity remains the same as air temperature decreases.

117. The map below represents a section of a surface weather map showing weather stations *A* through *D*.



At which weather station are the most unstable weather conditions occurring?

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

118. Which geographic region is the most common source region for the mT air masses that move into New York State?

- A) northern Canada
- B) Gulf of Mexico
- C) Arctic Ocean
- D) southwestern United States

119. A strong west wind steadily blew over Lake Ontario picking up moisture. As this moist air flowed over the Tug Hill Plateau, the plateau received a 36-inch snowfall. This snow fell from clouds that formed when rising air was

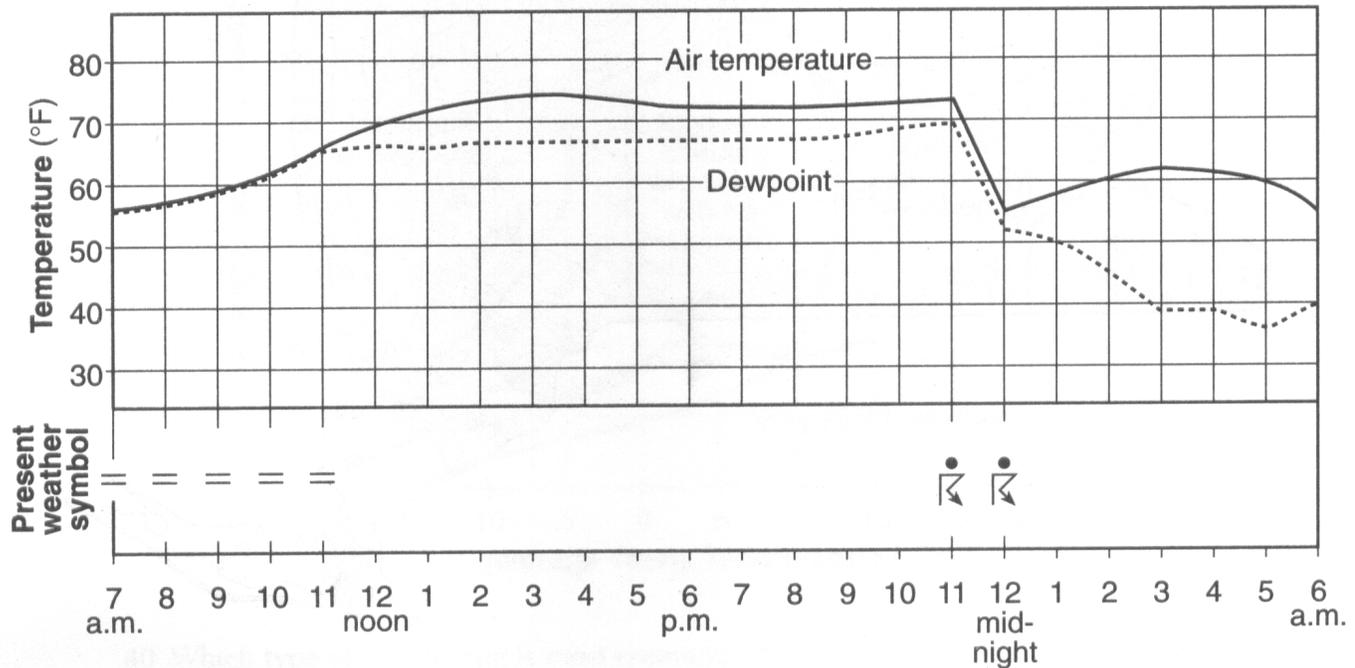
- A) cooled by expansion, causing water vapor to condense
- B) cooled by compression, causing water vapor to condense
- C) warmed by expansion, causing water vapor to evaporate
- D) warmed by compression, causing water vapor to evaporate

120. A low-pressure system in the Northern Hemisphere has a surface air-circulation pattern that is

- A) clockwise and away from the center
- B) clockwise and toward the center
- C) counterclockwise and away from the center
- D) counterclockwise and toward the center

# Regents Review #4

Base your answers to questions 121 and 122 on the graph below, which shows air temperature, dewpoint, and present weather conditions for a 23-hour period at Dallas, Texas.



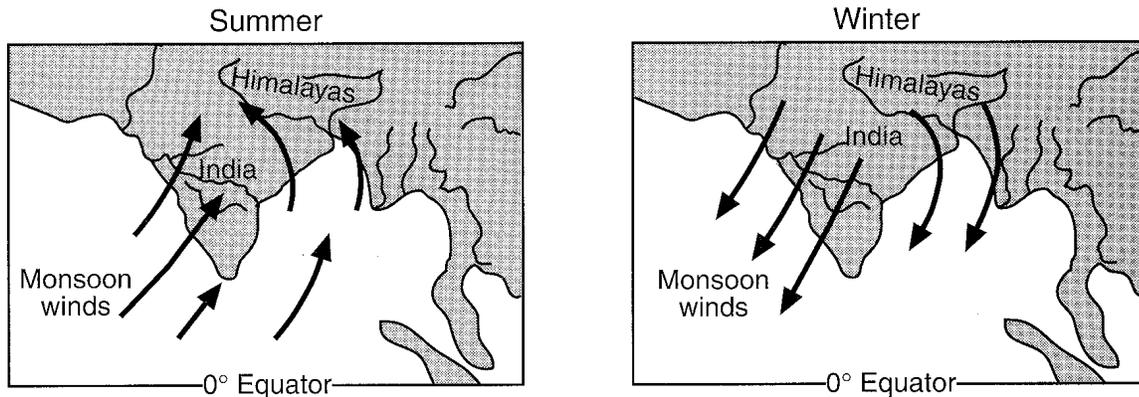
121. The thunderstorm that occurred between 11 p.m. and 12 midnight was most likely the result of

- A) the arrival of a warm front
- B) the arrival of a cold front
- C) an increase in the difference between air temperature and dewpoint
- D) an increase in both air temperature and dewpoint

122. Which weather condition was reported at Dallas when the air temperature was equal to the dewpoint?

- A) fog
- B) rain
- C) thunderstorm
- D) drizzle

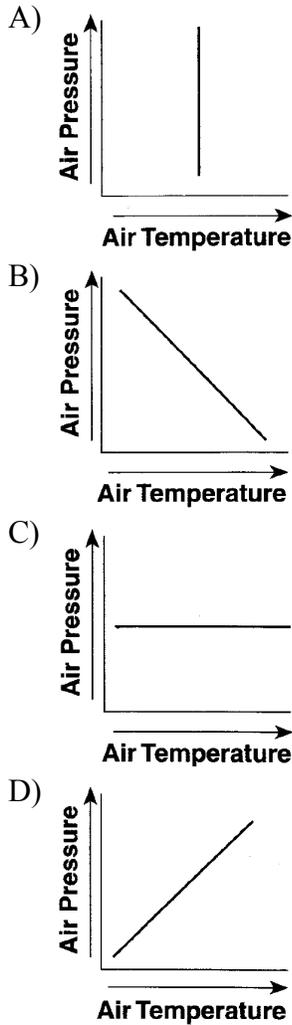
123. The arrows on the two maps below show how the monsoon winds over India change direction with the seasons.



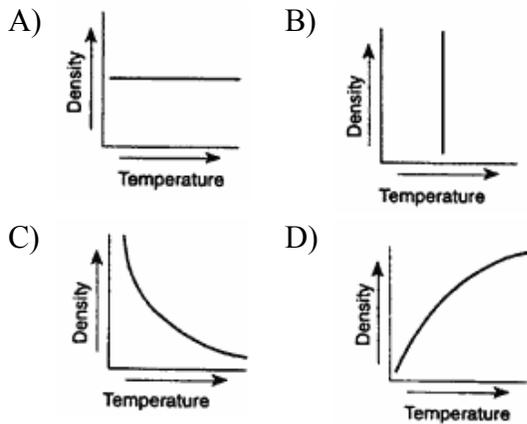
How do these winds affect India's weather in summer and winter?

- A) Summer is cooler and less humid than winter.
- B) Summer is warmer and more humid than winter.
- C) Winter is warmer and less humid than summer.
- D) Winter is cooler and more humid than summer.

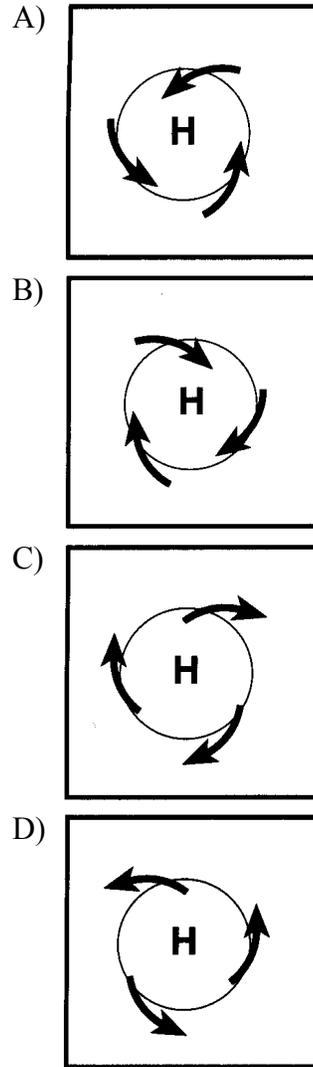
124. Which graph best represents the change in air pressure as air temperature increases at Earth's surface?



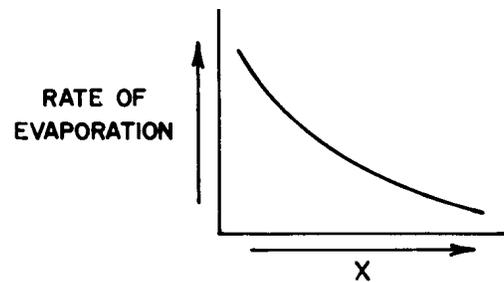
125. Which graph best represents the relationship between air temperature and air density in the atmosphere?



126. Which map best represents the surface wind pattern around a Northern Hemisphere high-pressure center?



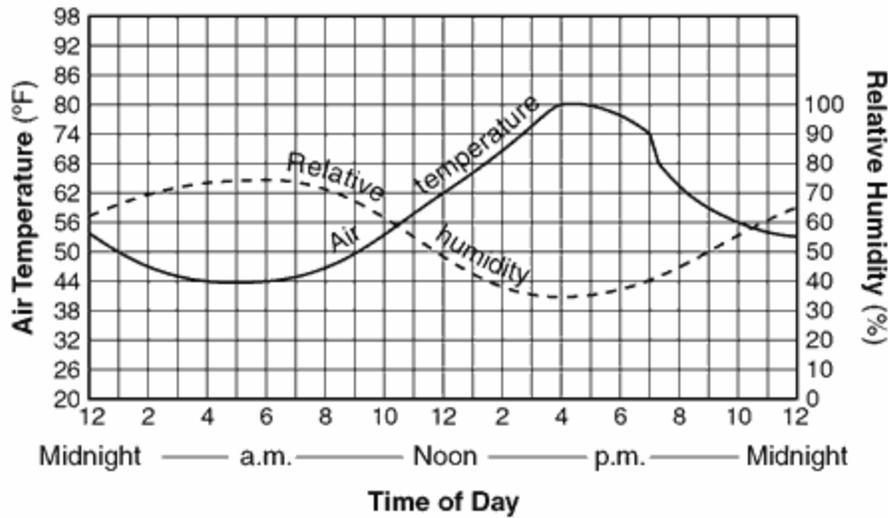
127. The graph below represents how the rate of evaporation of water is affected by a variable,  $X$ .



Which variable is most likely represented by  $X$ ?

- A) temperature
- B) wind velocity
- C) exposed surface area
- D) moisture content of the air

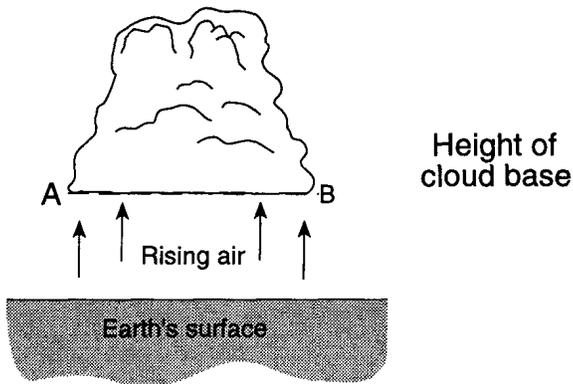
128. Base your answer to the following question on the graph below. The graph shows air temperature and relative humidity at a single location during a 24-hour period.



At which time would the rate of evaporation most likely be greatest?

- A) 11 p.m.      B) 6 a.m.      C) 10 a.m.      D) 4 p.m.

129. The diagram below shows a cross section of a cumulus cloud. Line *AB* indicates the base of the cloud.



Which graph best represents the temperature measured along line *AB*?

- A) B) C) D)

130. Surface winds on Earth are primarily caused by differences in

- A) air density due to unequal heating of Earth's surface  
 B) ocean wave heights during the tidal cycle  
 C) rotational speeds of Earth's surface at various latitudes  
 D) distances from the Sun during the year