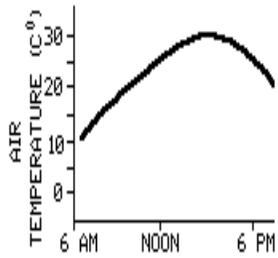
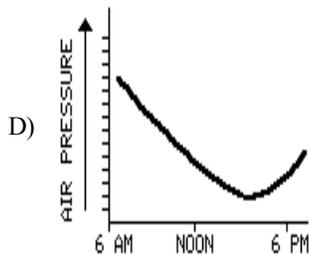
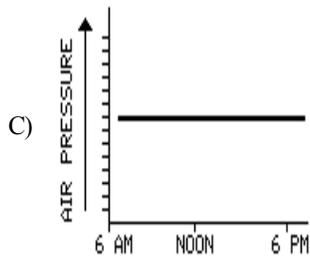
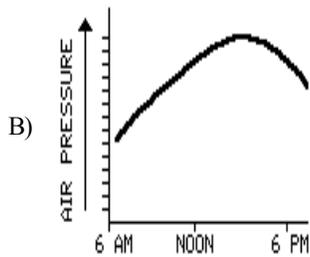
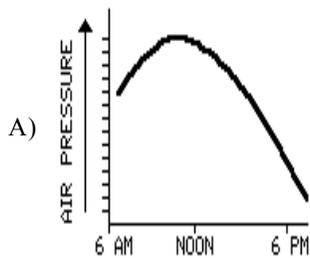


Name: \_\_\_\_\_

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



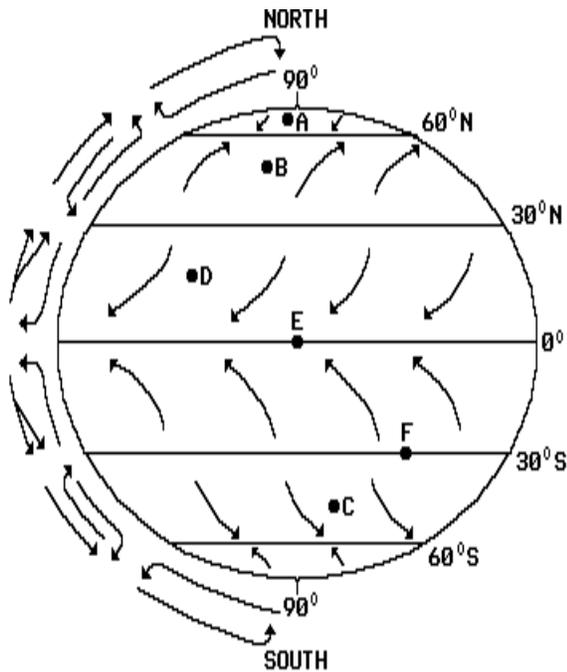
Which graph best illustrates the probable change in air pressure during the same time period?



- 2) As a sample of very moist air rises from sea level to a higher altitude, the probability of condensation occurring in that air sample will
- increase
  - decrease
  - remain the same

- 3) The air temperature and the wet-bulb temperature were measured and both were found to be  $18^{\circ}\text{C}$ . Two hours later, measurements were taken again and the air temperature was  $20^{\circ}\text{C}$ , while the wet-bulb temperature remained  $18^{\circ}\text{C}$ . The relative humidity of the air during those two hours
- decreased
  - increased
  - remained the same
- 4) A balloon carrying weather instruments is released at the Earth's surface and rises through the troposphere. As the balloon rises, what will the instruments generally indicate?
- an increase in both air temperature and air pressure
  - a decrease in air temperature and an increase in air pressure
  - an increase in air temperature and a decrease in air pressure
  - a decrease in both air temperature and air pressure
- 5) What is the approximate dewpoint temperature if the dry-bulb temperature is  $10^{\circ}\text{C}$  and the wet-bulb temperature is  $8^{\circ}\text{C}$ ? [Refer to the *Earth Science Reference Tables*.]
- $1^{\circ}\text{C}$
  - $-13^{\circ}\text{C}$
  - $6^{\circ}\text{C}$
  - $3^{\circ}\text{C}$
- 6) As warm, moist air moves into a region, barometric pressure readings in the region will generally
- remain the same
  - decrease
  - increase
- 7) As wind velocity decreases, the distance between isobars on a weather map will
- decrease
  - increase
  - remain the same
- 8) Which factor is most directly related to wind velocity?
- relative humidity
  - pressure gradient
  - dewpoint
  - cloud type
- 9) What is the dewpoint temperature when the air temperature is  $18^{\circ}\text{C}$  and the wet-bulb temperature is  $13^{\circ}\text{C}$ .
- $9^{\circ}\text{C}$
  - $6^{\circ}\text{C}$
  - $25^{\circ}\text{C}$
  - $13^{\circ}\text{C}$

- 10) The diagram below represents the general circulation of the Earth's atmosphere and the Earth's planetary wind and pressure belts. Points *A* through *F* represent locations on the Earth's surface.

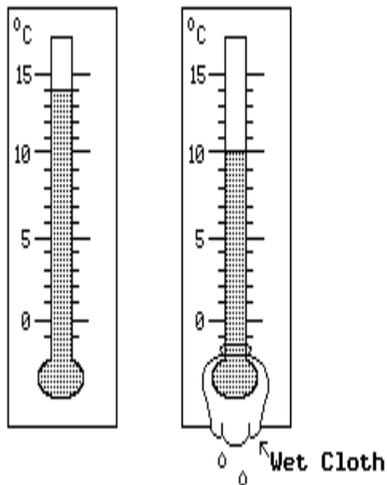


Which location is experiencing a southwest planetary wind?

- A) *B*      B) *F*      C) *A*      D) *C*
- 11) What is the approximate dewpoint temperature if the dry-bulb temperature is 13°C and the wet-bulb temperature is 10°C? [Refer to the *Earth Science Reference Tables*.]
- A) 10°C      C) 3°C  
B) 7°C      D) -25°C
- 12) The primary cause of winds is the
- A) uniform density of the atmosphere  
B) unequal heating of the Earth's atmosphere  
C) friction between the atmosphere and the lithosphere  
D) rotation of the Earth
- 13) What is the approximate dewpoint temperature if the dry-bulb temperature is 20°C and the wet-bulb temperature is 13°C? [Refer to the *Earth Science Reference Tables*.]
- A) 12°C      C) 8°C  
B) 7°C      D) -25°C
- 14) Which combination of air temperature and dewpoint temperature would most likely occur in humid air?
- A) air temperature 10°C, dewpoint temperature -4°C  
B) air temperature 24°C, dewpoint temperature 23°C  
C) air temperature 26°C, dewpoint temperature 10°C  
D) air temperature 15°C, dewpoint temperature 3°C

- 15) According to the *Earth Science Reference Tables*, an air pressure of 30.15 inches of mercury is equal to
- A) 1023 mb      C) 1019 mb  
B) 1021 mb      D) 1017 mb
- 16) According to the "Dewpoint Temperature Chart" in the *Earth Science Reference Tables*, what is the dewpoint if the air temperature is 14°C and the wet-bulb temperature is 9°C?
- A) 4°C      C) 0°C  
B) -14°C      D) 9°C
- 17) The air temperature is 10°C. Which dewpoint temperature would result in the highest probability of precipitation?
- A) -4°C      C) 8°C  
B) 0°C      D) 6°C
- 18) What is the approximate dewpoint temperature if the dry-bulb temperature is 26°C and the wet-bulb temperature is 20°C? [Refer to the *Earth Science Reference Tables*.]
- A) 7°C      C) 17°C  
B) 11°C      D) 20°C
- 19) Two weather stations are located near each other. The air pressure at each station is changing so that the difference between the pressure is increasing. The wind speed between these two locations will probably
- A) decrease  
B) remain the same  
C) increase
- 20) A temperature of 80° Fahrenheit would be approximately equal to how many degrees on the Celsius scale?
- A) 27      C) 178  
B) 299      D) 34

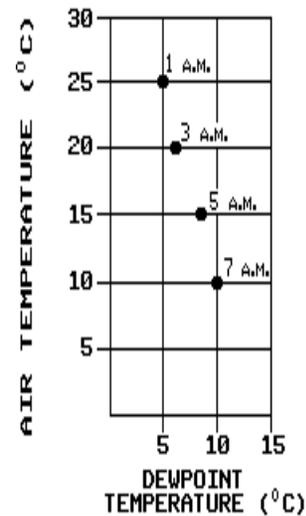
- 21) The two thermometers below show the dry-bulb and wet-bulb temperatures of the air.



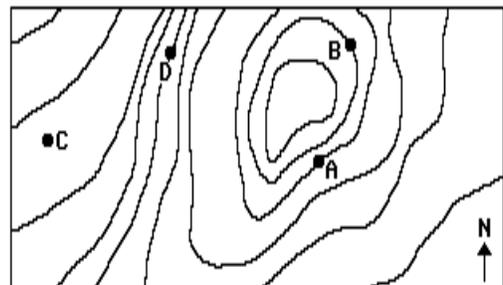
According to the dewpoint temperature chart in the *Earth Science Reference Tables*, what is the approximate dewpoint temperature of the air?

- A) 6°C  
B) 11°C  
C) 4°C  
D) -25°C
- 22) As the difference between the dewpoint temperature and the air temperature decreases, the probability of precipitation
- A) remains the same  
B) increases  
C) decreases
- 23) What is the approximate dewpoint temperature if the dry-bulb temperature is 26°C and the wet-bulb temperature is 21°C? [Refer to the *Earth Science Reference Tables*.]
- A) 12°C  
B) 5°C  
C) 18°C  
D) 23°C
- 24) According to the *Earth Science Reference Tables*, a barometric pressure reading of 28.97 inches is equal to
- A) 1,008 mb  
B) 1,006 mb  
C) 981 mb  
D) 984 mb
- 25) According to the *Earth Science Reference Tables*, an air pressure of 29.65 inches of mercury is equal to
- A) 1001.0 mb  
B) 1004.0 mb  
C) 999.0 mb  
D) 984.0 mb
- 26) An air pressure of 1023 millibars is equal to how many inches of mercury?
- A) 30.10  
B) 30.19  
C) 30.21  
D) 30.15

- 27) The graph below shows the air temperature and dewpoint temperature at one location at four different times during one morning.



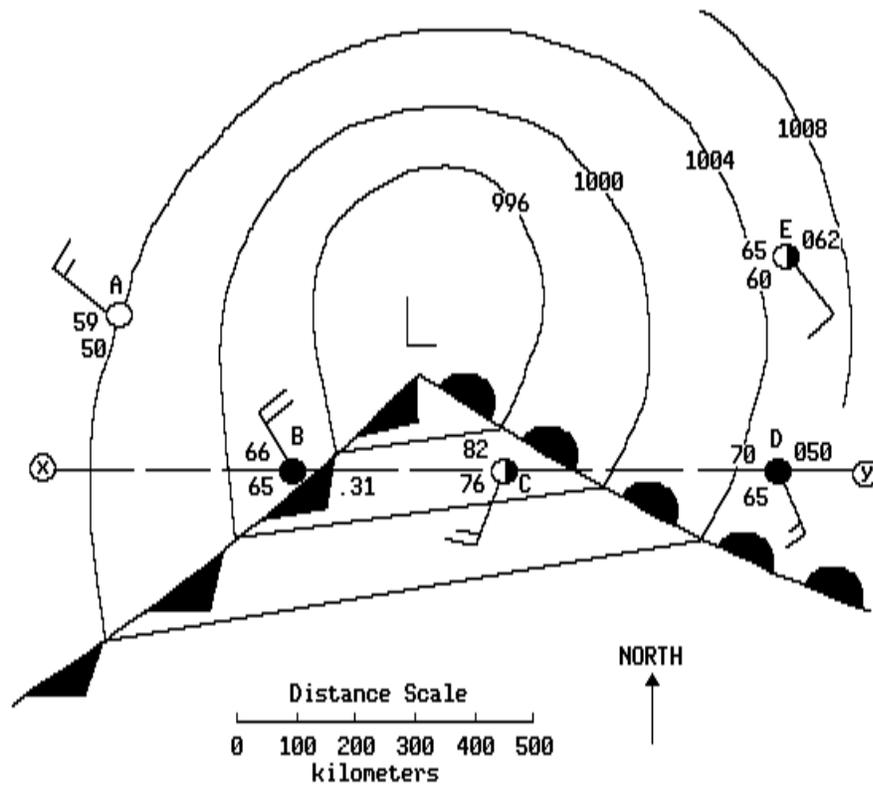
- At what time was the chance of precipitation the *greatest*?
- A) 3 a.m.  
B) 5 a.m.  
C) 7 a.m.  
D) 1 a.m.
- 28) According to the *Earth Science Reference Tables*, when the dry-bulb temperature reading is 10.°C and the wet-bulb temperature is 2.0°C, the dewpoint temperature of the air is approximately
- A) -8.0°C  
B) 10.°C  
C) 2.0°C  
D) -14.°C
- 29) The map below represents a portion of an air-pressure field at the Earth's surface. At which position is wind speed *lowest*?



- A) D  
B) C  
C) A  
D) B
- 30) A temperature of 104° Fahrenheit is equal to a temperature of
- A) 136°C  
B) 40°C  
C) 104°C  
D) 72°C



- 40) 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.

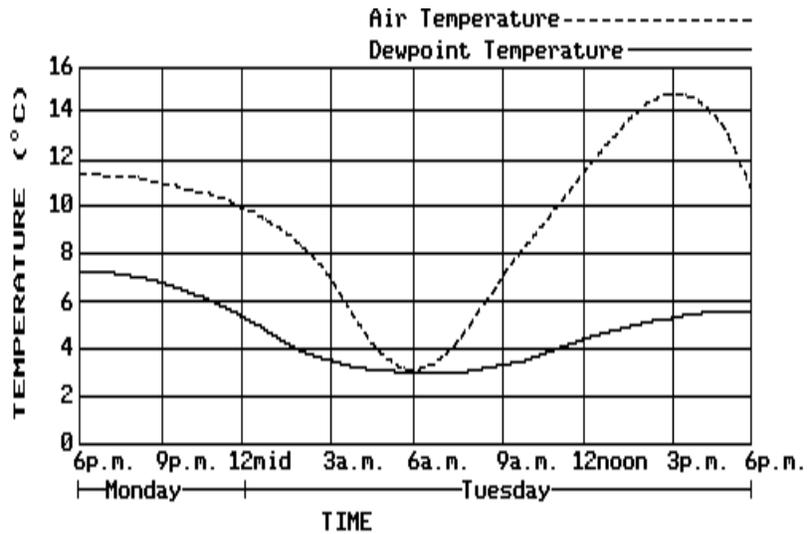


In which diagram do the arrows best represent the wind direction in the weather system?

- A) A) B) C) D)

Questions 41 and 42 refer to the following:

The graph below shows the air temperature and dewpoint temperature over a 24-hour period for a location in New York State.



- 41) The air's capacity to hold water vapor was *greatest* at
- A) 6 p.m. Monday                      C) 6 a.m. Tuesday  
 B) 12 noon Tuesday                  D) 3 p.m. Tuesday
- 42) When was the air at ground level saturated with water vapor?
- A) 3 p.m. Tuesday                      C) 6 a.m. Tuesday  
 B) 6 p.m. Monday                      D) 12 noon Tuesday
- 43) The table below shows the noontime data for air pressure and air temperature at a location over a period of one week.

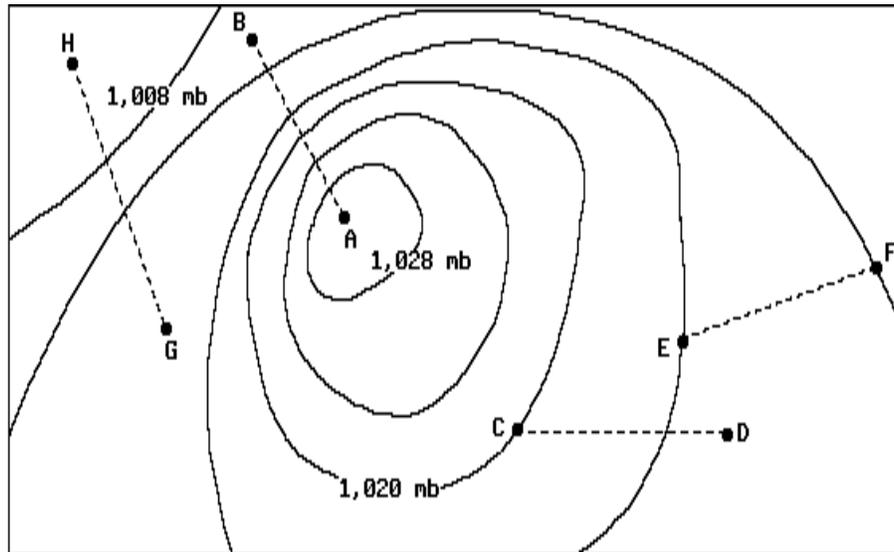
Date	Nov. 9	Nov. 10	Nov. 11	Nov. 12	Nov. 13	Nov. 14	Nov. 15
Air Temperature (°C)	1	6	0	-2	-4	5	10
Air Pressure (millibars)	1024	998	1015	1021	1030	1013	?

Based on the data provided, which air pressure would most likely occur at noon on November 15?

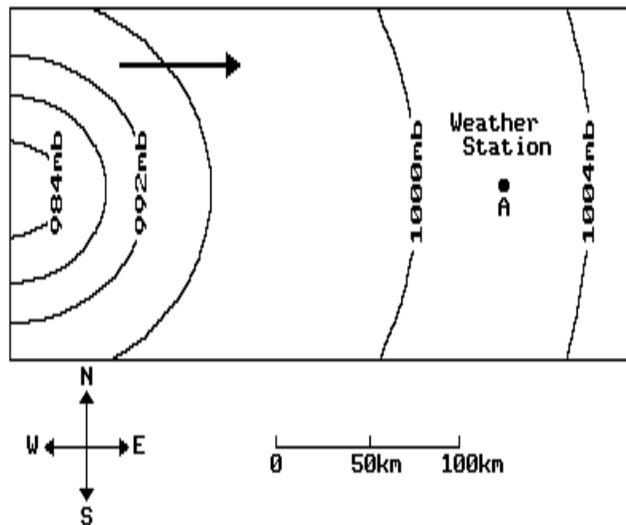
- A) 987 millibars                      B) 1022 millibars                      C) 1017 millibars                      D) 1015 millibars

Questions 44 and 45 refer to the following:

The surface weather map below represents a high-pressure center located over the central United States. The air pressure field lines are in millibars and the letters represent the locations of weather stations.



- 44) Along which dashed line would windspeeds be *greatest*?
- |              |              |
|--------------|--------------|
| A) <i>CD</i> | C) <i>EF</i> |
| B) <i>AB</i> | D) <i>GH</i> |
- 45) According to the *Earth Science Reference Tables*, the air pressure recorded at station *C* is equal to how many inches of mercury?
- |          |          |
|----------|----------|
| A) 30.35 | C) 30.08 |
| B) 29.95 | D) 30.12 |
- 46) The diagram below represents weather station *A* in the path of an airmass approaching from the west. Which change will most likely be recorded first by weather station *A*?



- |                              |                                |
|------------------------------|--------------------------------|
| A) an increase in wind speed | C) an increase in air pressure |
| B) a decrease in temperature | D) a decrease in cloud cover   |