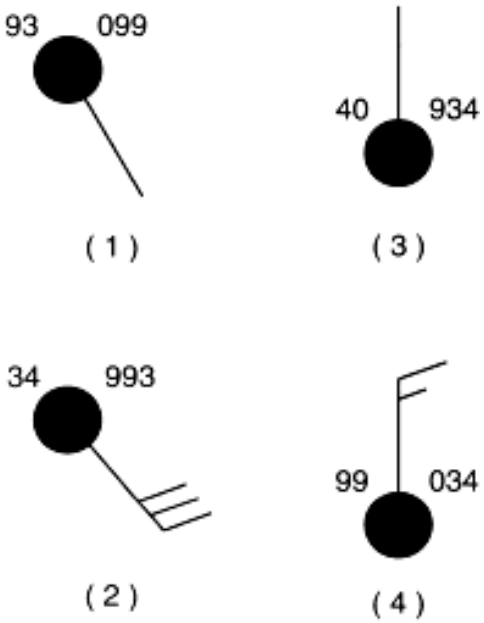
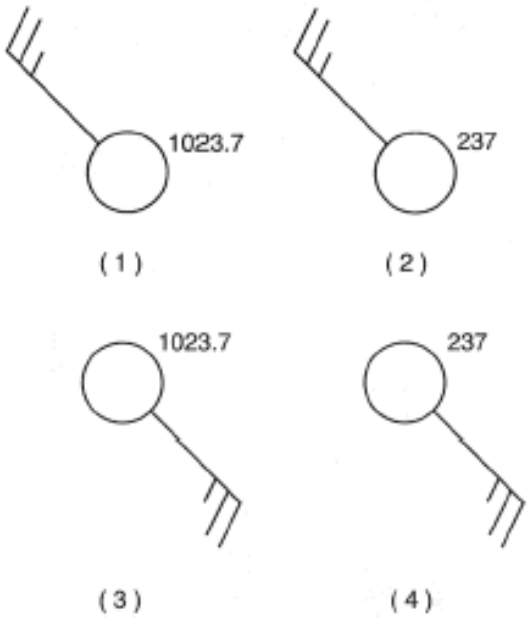
FA RP 1 **Name_____**
Mr. Chase **28-MAY-08**

1. Which weather-station model shows an air pressure of 993.4 millibars?



2. Which station model shows the correct form for indicating a northwest wind at 25 knots and an air pressure of 1023.7 mb?



3. When the dry-bulb temperature is 22ºC and the wet-bulb temperature is 13ºC, the relative humidity is

1. 10% **3.** 41%

2. 33%

4. 59%

4. 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?

1. 5°C

2. 7°C

3. 3°C

4. 10°C

5. 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?

1. The relative humidity was decreasing and the chance of precipitation was decreasing.

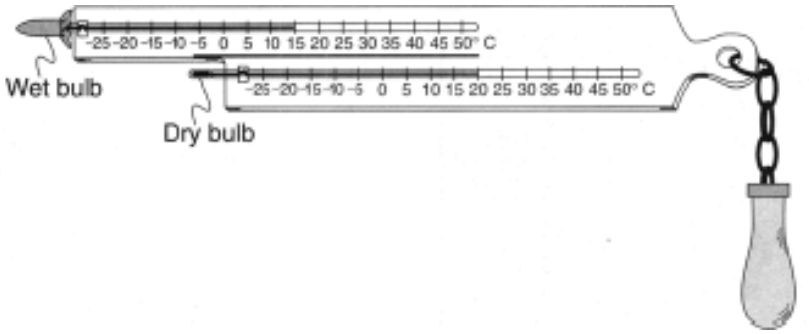
2. The relative humidity was decreasing and the chance of precipitation was increasing.

3. The relative humidity was increasing and the chance of precipitation was decreasing.

4. The relative humidity was increasing and the chance of precipitation was increasing.

6. The diagram below shows a sling psychrometer.

Based on the dry-bulb temperature and the wet-bulb temperature, what is the relative humidity?



1. 66%

2. 58%

3. 51%

4. 12%

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

1. The dewpoint is farther from the condensation point, causing rain.

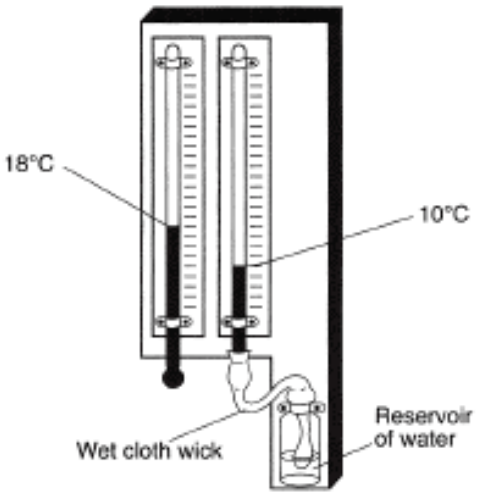
2. The air temperature is closer to the dewpoint, making cloud formation more likely.

3. The amount of moisture in the air is greater, making the air heavier.

4. The specific heat of the moist air is greater than the drier air, releasing energy.

8. The weather instrument shown in the accompanying image can be used to determine relative humidity.

Based on the temperature shown, the relative humidity is



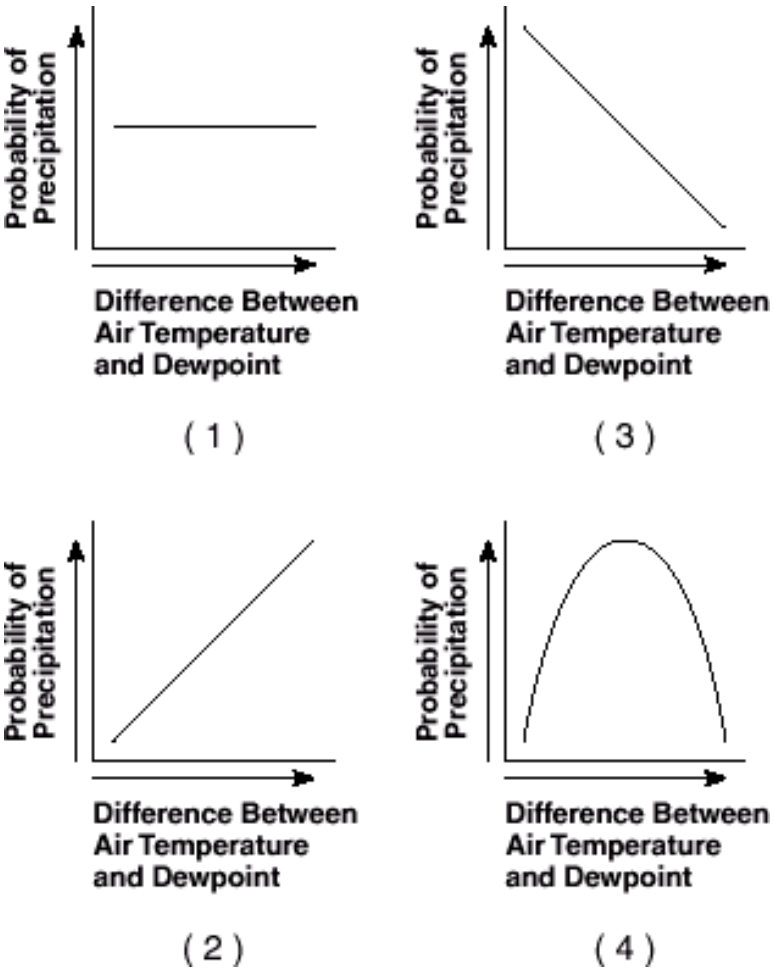
1. 19%

2. 2%

3. 33%

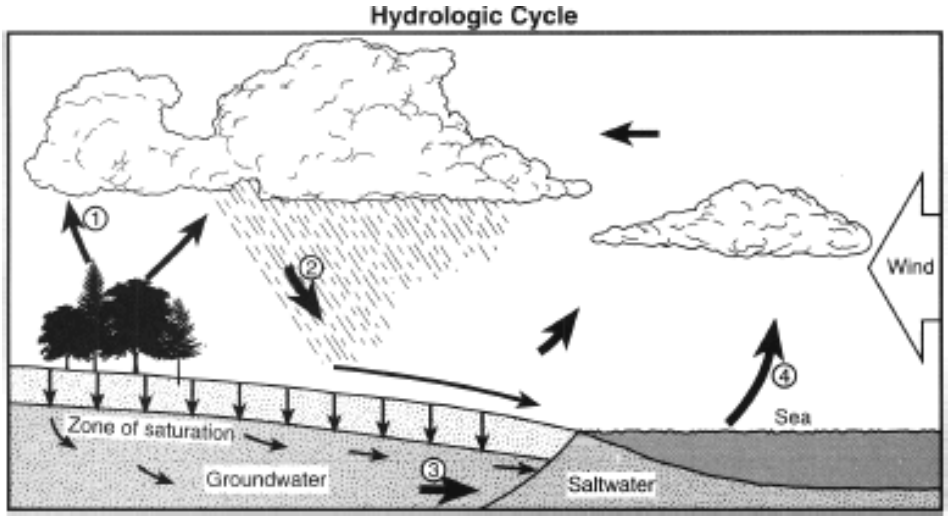
4. 40%

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



10. Base your answer to the question on the accompanying water cycle diagram shown. Some arrows are numbered 1 through 4 and represent various processes.

The clouds have formed primarily because moist air



1. rises, expands, and cools

2. rises, expands, and warms

3. sinks, compresses, and cools

4. sinks, compresses, and warms

11. What is the relative humidity when the air temperature is 29ºC and the wet-bulb temperature is 23ºC?

1. 6%

2. 20%

3. 54%

4. 60%

12. The air outside a classroom has a dry-bulb temperature of 10°C and a wet-bulb temperature of 4°C. What is the relative humidity of this air?

1. 1%

2. 14%

3. 33%

4. 54%

13. 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?

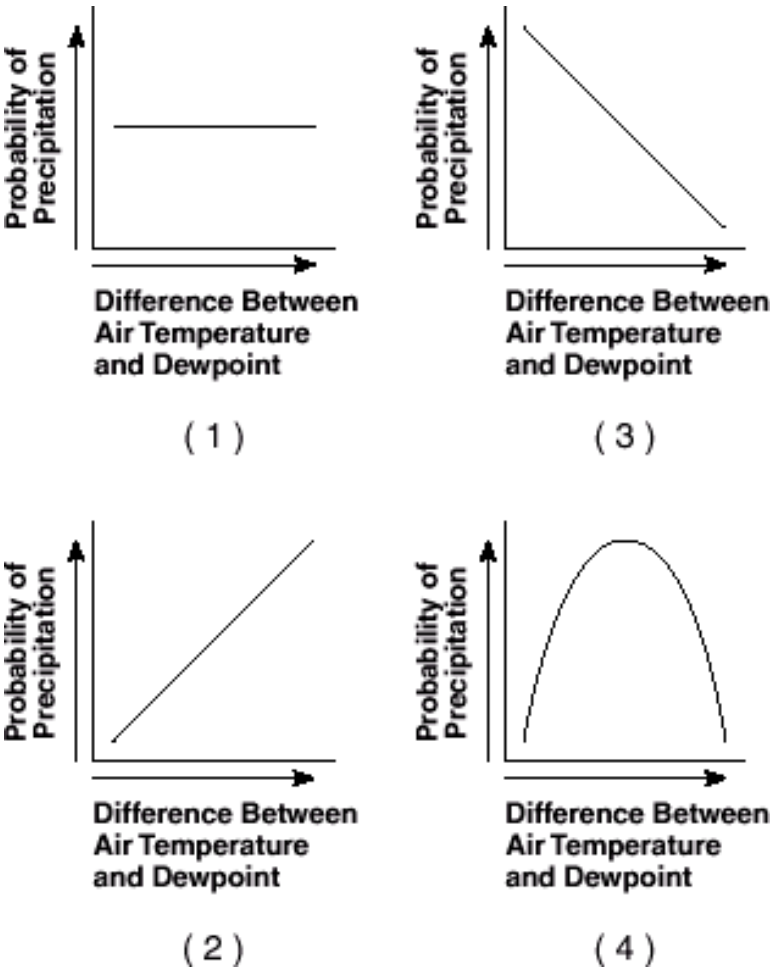
1. The relative humidity was decreasing and the chance of precipitation was decreasing.

2. The relative humidity was decreasing and the chance of precipitation was increasing.

3. The relative humidity was increasing and the chance of precipitation was decreasing.

4. The relative humidity was increasing and the chance of precipitation was increasing.

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



15. What is the dewpoint temperature when the dry-bulb temperature is 16ºC and the wet-bulb temperature is 11ºC?

1. 5ºC

2. 7ºC

3. 9ºC

4. -17ºC

16. What is the dewpoint temperature when the dry-bulb temperature is 12°C and the wet-bulb temperature is 4° C?

1. -9°C

2. 19°C

3. 8°C

4. 4°C

17. A parcel of air has a dry-bulb temperature of 24ºC and a relative humidity of 55%. What is the dewpoint of this parcel of air?

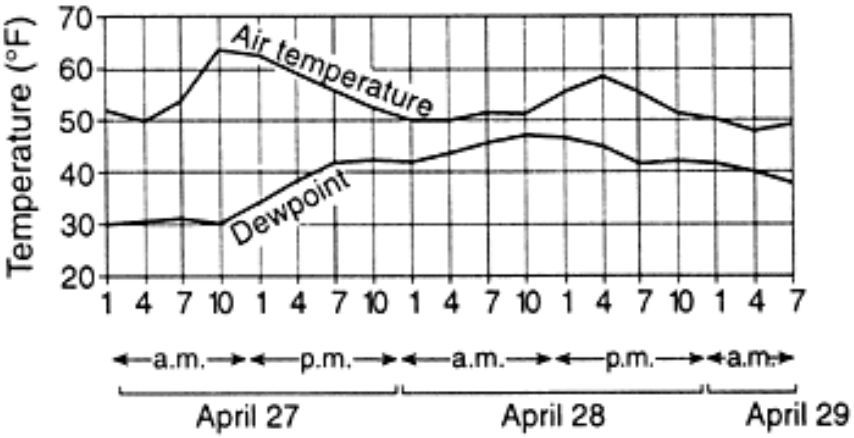
1. 6ºC

3. 24ºC

2. 14ºC

4. 29ºC

18. The graph is a computer-generated forecast of air temperature and dewpoint for a city during a period of 2¼ days. At which time during this period is the rate of evaporation expected to be highest?



1. April 27 at 10 A.M.

2. April 28 at 10 A.M.

3. April 28 at 4 P.M.

4. April 29 at 4 A.M.