1. Which diagram correctly matches the weather front symbol with its atmospheric cross section?

1)

Front Symbol	Atmospheric Cross Section
	Warm / Cold → / Cool →

2)

Front Symbol	Atmospheric Cross Section
	Warm → / Cold →

3)

Front Symbol	Atmospheric Cross Section
	Warm / Cold → / Cool →

4)

Front Symbol	Atmospheric Cross Section
	Cold → / Warm →
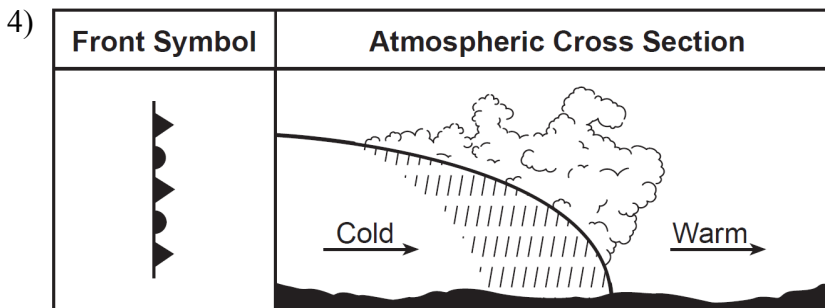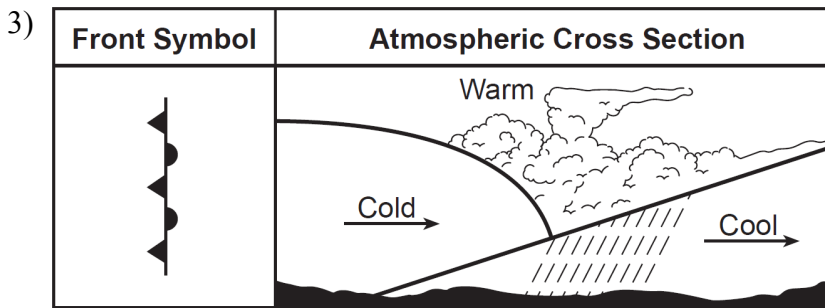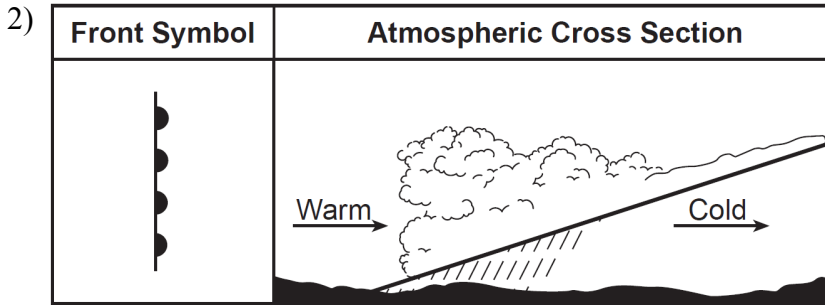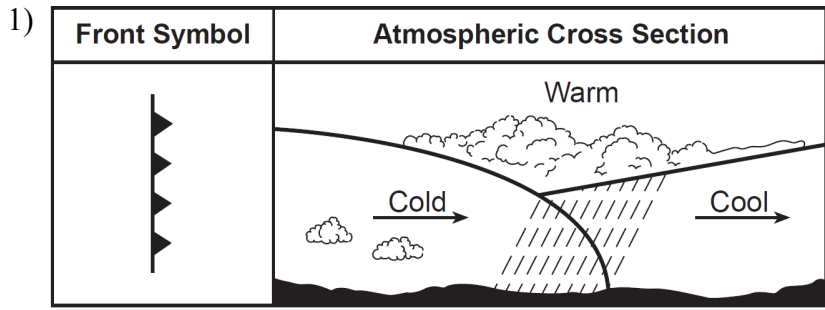
2. Base your answer to the following question on the map below and on your knowledge of Earth science. The map shows a low-pressure system over the eastern United States. Points U through Z represent locations on Earth's surface.
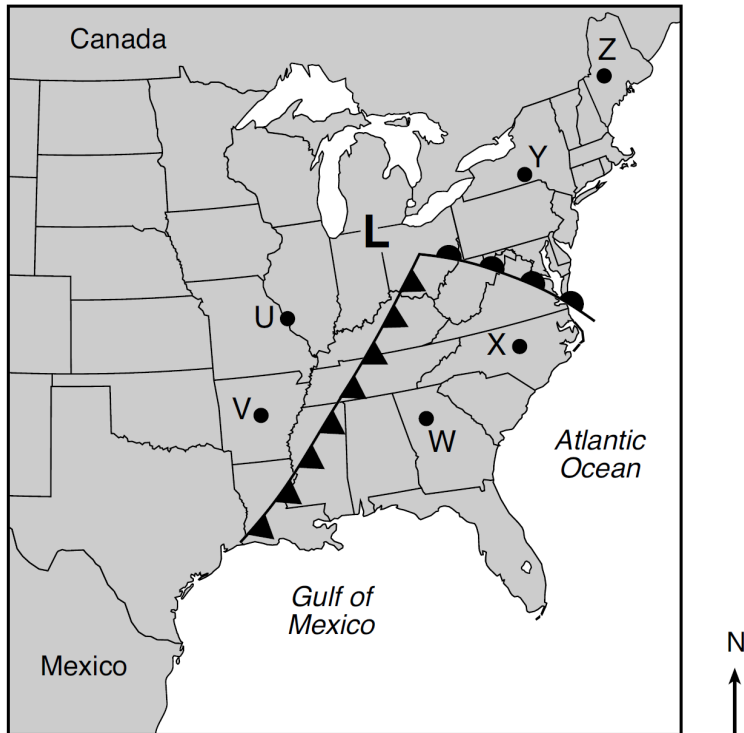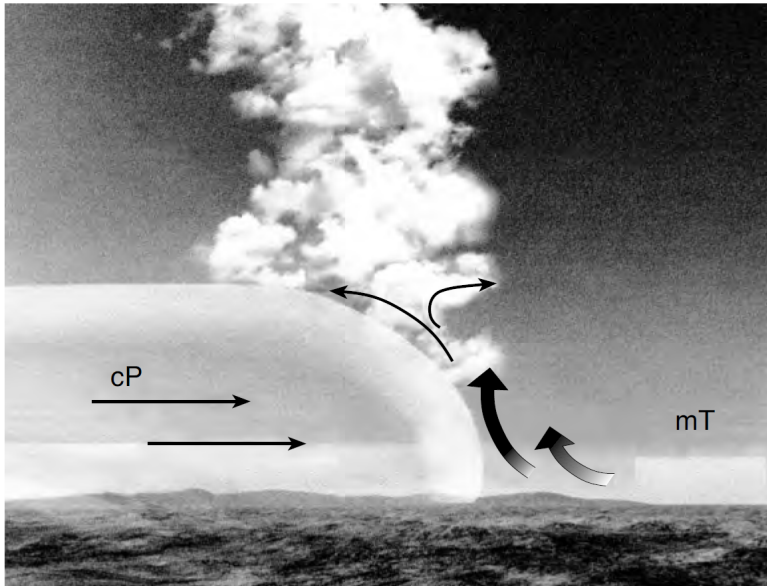

Which two locations most likely have the warmest air temperatures?

1) Y and Z 2) U and V 3) V and W 4) W and X

Base your answers to questions **3** and **4** on the cross section below and on your knowledge of Earth science. The arrows on the cross section represent the air movement along a weather front between two different air masses. The air masses are labeled.


3. Which statement best describes the difference in air temperature and humidity between the cP and mT air masses?

   1) The mT air mass is warmer and more humid.
   2) The mT air mass is cooler and less humid.
   3) The cP air mass is warmer and less humid.
   4) The cP air mass is cooler and more humid.

4. Which type of front is represented by this cross section?

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

Base your answers to questions **5** and **6** 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.
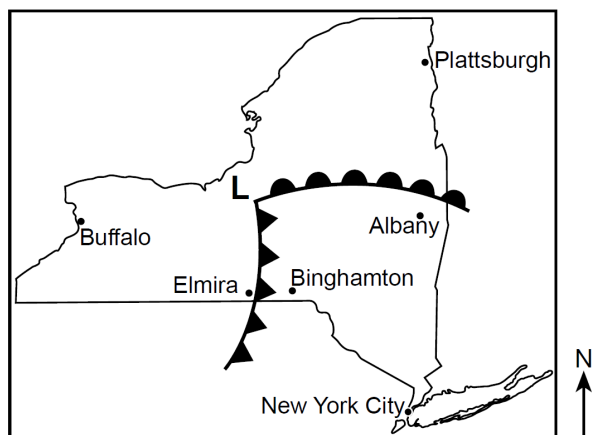
5. Which map shows the most probable areas of precipitation that would appear on a radar image taken at the time of these frontal positions?
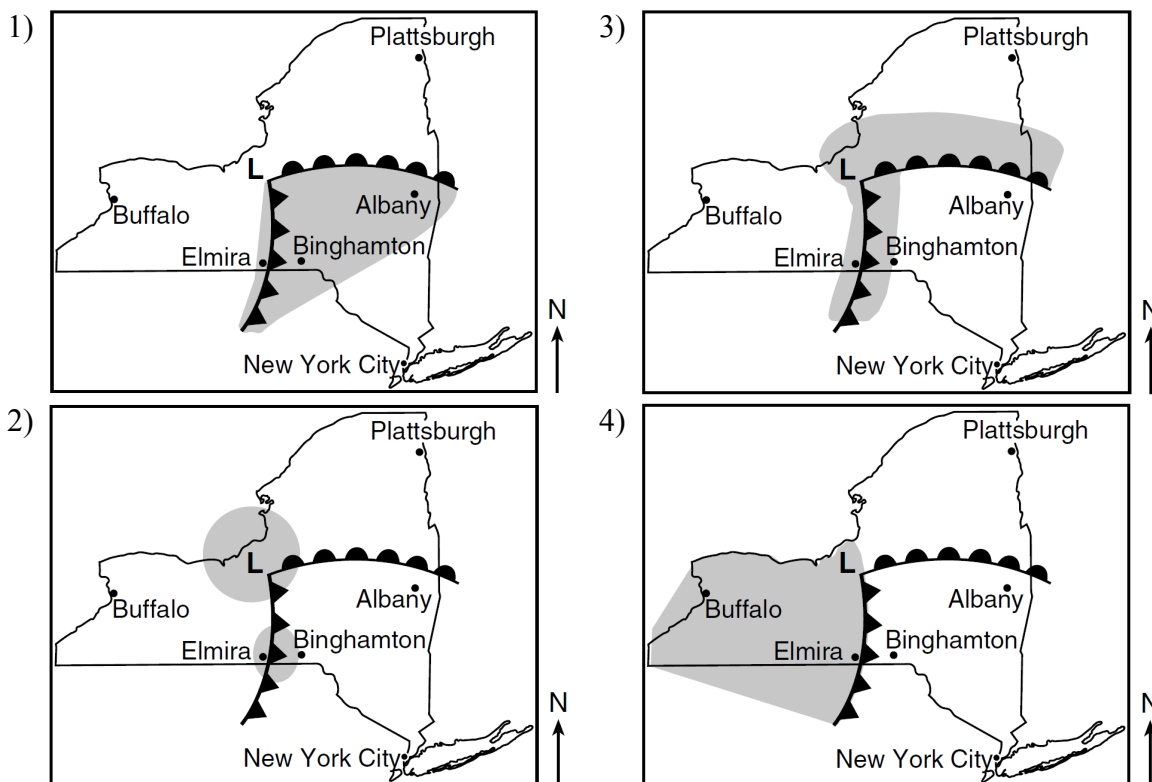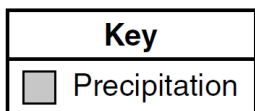
6. If the center of the low-pressure system follows a normal storm track, toward which city would the center of this low most likely move?

1) Buffalo   2) Elmira   3) New York City   4) Plattsburgh

7. Which weather map symbol is associated with extremely low air pressure?

   1)   3)

   2)   4)

8. 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

   1) continental polar   3) maritime polar
   2) continental tropical   4) maritime tropical

9. Base your answer to the following question 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.
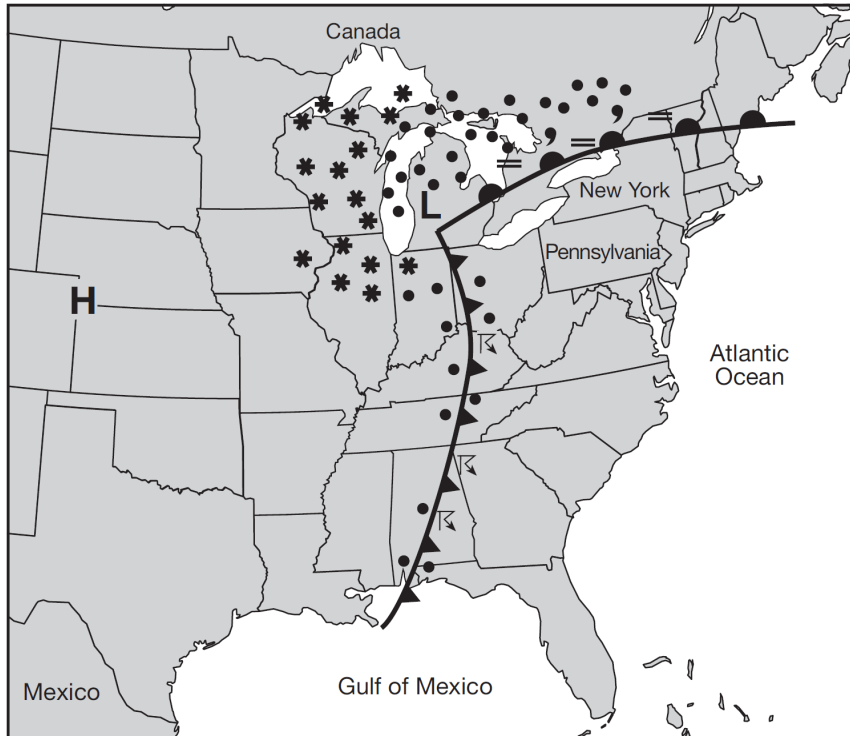

What was the most likely source region for the air mass over Pennsylvania?

1) New York State 2) Pacific Ocean   3) Gulf of Mexico 4) Canada

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

1) an mT air mass   3) a cold front
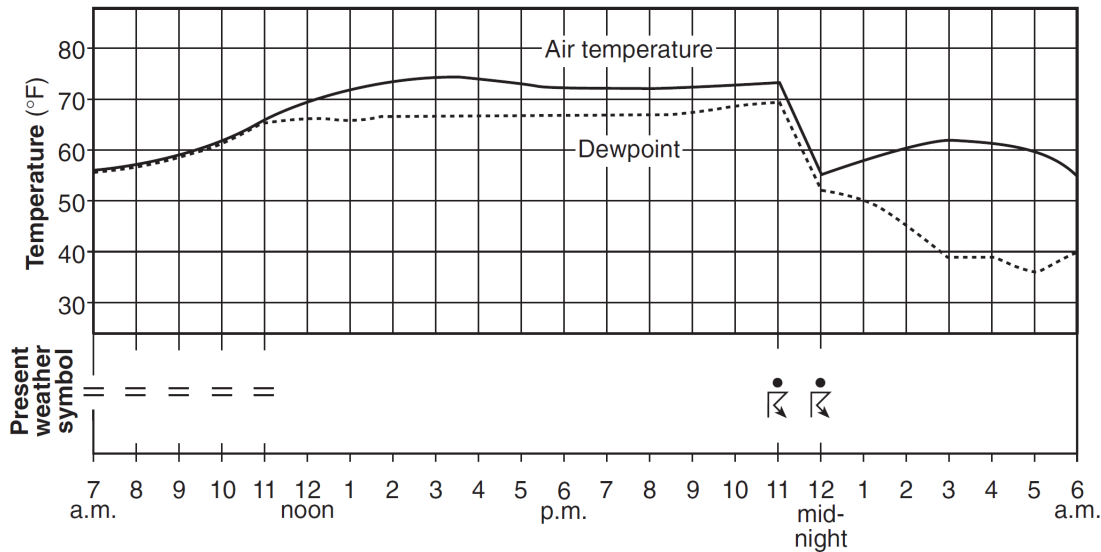2) a cT air mass   4) a warm front

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

1)

2)

3)

4)
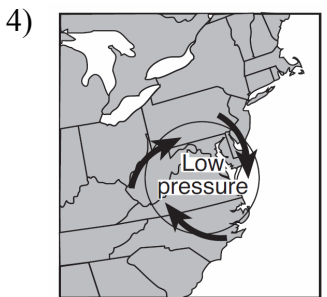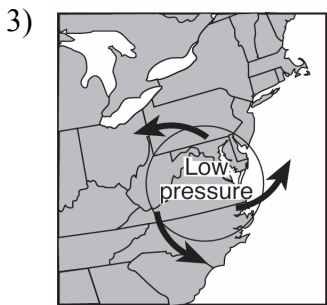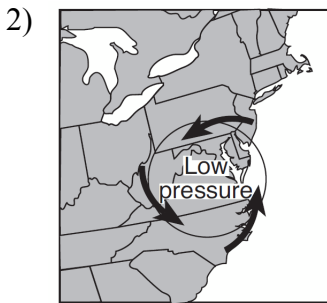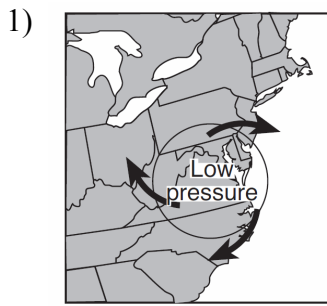
12. Base your answer to the following question on the graph below, which shows air temperature, dewpoint, and present weather conditions for a 23-hour period at Dallas, Texas.

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

1) the arrival of a warm front
2) the arrival of a cold front
3) an increase in the difference between air temperature and dewpoint
4) an increase in both air temperature and dewpoint

13. Base your answer to the following question on the weather map of North America below. The map shows the location of a front and the air mass influencing its movement.

Which type of front and frontal movement is shown on the weather map?

1) cold front moving northwestward
2) cold front moving southeastward
3) warm front moving northwestward
4) warm front moving southeastward

14. The satellite photograph below shows a Northern Hemisphere cloud pattern.
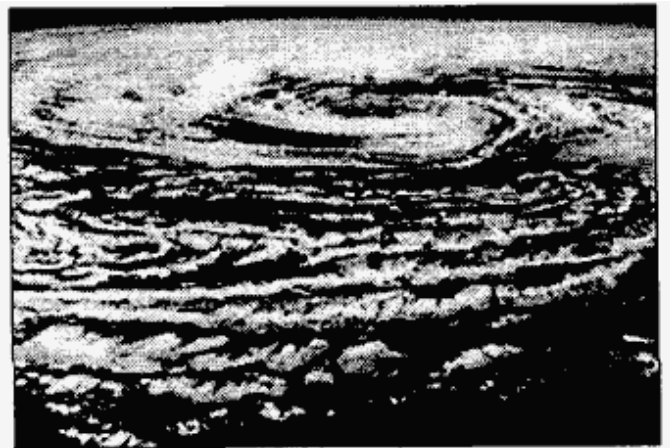
The center of this cloud pattern is most likely the center of a

1) cold, dry air mass
2) warm, dry air mass
3) low-pressure system
4) high-pressure system

15. 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.

16. 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?

   1) continental tropical 3) maritime tropical
   2) continental polar   4) maritime polar

Base your answers to questions **17** and **18** on the station model below and on your knowledge of Earth science.
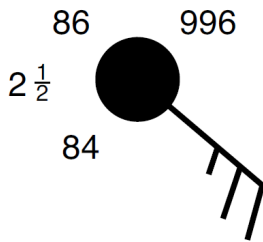
17. Which present-weather symbol represents the form of precipitation that is most likely occurring at this location?

   1)   2)   3)   4)

18. What are the wind direction and the wind speed at this location?

   1) wind from the southeast at 15 knots   3) wind from the southeast at 25 knots
   2) wind from the northwest at 15 knots   4) wind from the northwest at 25 knots

19. Base your answer to the following question on the graphs below and on your knowledge of Earth science. The graphs show air temperatures and dewpoints in °F, and wind speeds in knots (kt) from 2:00 a.m. to 11:00 p.m. at a certain New York State location.
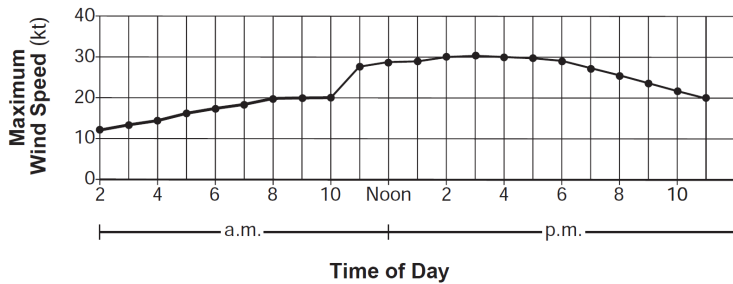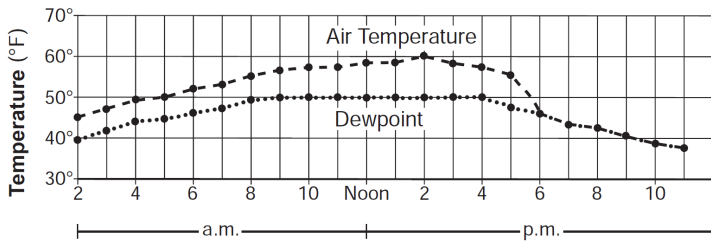
Which station model represents the weather data for this location at 4:00 p.m.?

1) 40 / 58
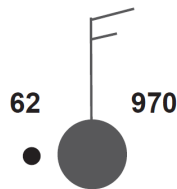2) 50 / 58
3) 58 / 40
4) 58 / 50

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20. The station model below represents the weather conditions for a location in New York State.
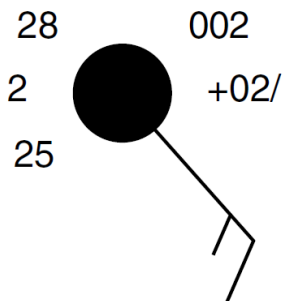
The barometric trend for the past three hours at this location indicates a steady increase of

1) 0.2 mb
2) 2.0 mb
3) 0.002 mb
4) 0.02 mb

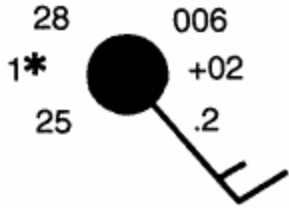21. The station model below shows several weather variables recorded at a particular location.

What was the most likely dewpoint at this location?

1) 32°F   2) 40°F   3) 61°F   4) 70°F

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

1) 900.6 mb 　　　 3) 1000.6 mb
2) 960.0 mb 　　　 4) 1006.0 mb

23. A severe thunderstorm warning was issued on a warm summer afternoon. Which present weather symbol represents the dangerous solid form of precipitation that is commonly associated with some of these severe thunderstorms?

1) ✳ 　　 2) ◭ 　　 3) △ 　　 4) ◓

24. 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?

1) cP and cA 　　　 3) cP and mT
2) cT and mP 　　　 4) mP and mT

Base your answers to questions **25** through **29** on on the diagram below, which represents a satellite image of Hurricane Gilbert in the Gulf of Mexico. Each **X** represents the position of the eye of the storm on the date indicated.
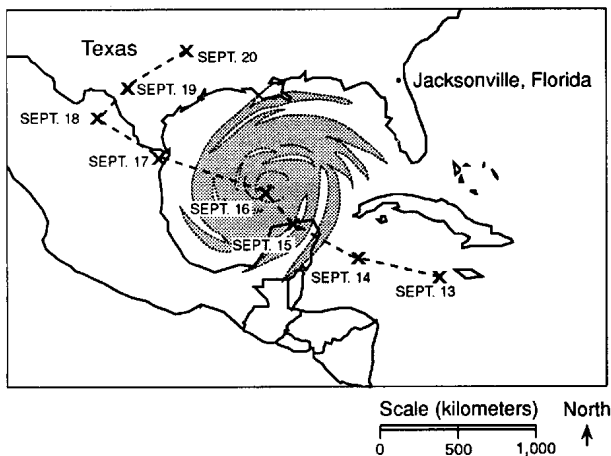
25. The general direction of Hurricane Gilbert's track from September 13 through September 18 was toward the

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

26. The surface wind pattern associated with Hurricane Gilbert was

1) counterclockwise and toward the center
2) counterclockwise and away from the center
3) clockwise and toward the center
4) clockwise and away from the center

27. What was the probable source of moisture for this hurricane?

1) carbon dioxide from the atmosphere
2) winds from the coastal deserts
3) transpiration from tropical jungles
4) evaporation from the ocean

28. On September 18, Hurricane Gilbert changed direction. Which statement provides the most probable reason for this change?

1) The airmass was cooled by the land surface.
2) The storm entered the prevailing westerlies wind belt.
3) The amount of precipitation released by the storm changed suddenly.
4) The amount of insolation received by the air mass decreased.

29. The air mass that gave rise to Hurricane Gilbert would be identified as

1) cP 　　 2) cT 　　 3) mT 　　 4) mP

30. Base your answer to the following question on the data table below, shows a classification system for hurricanes. A storm surge is a dome of water 65 to 80 kilometers wide that sweeps ashore at the coast near the point where the storm center (eye) hits the land.

Safir-Simpson Hurricane Scale

Hurricane Category	Central Air Pressure (mb)	Windspeed (km/hr)	Expected Storm Surge Height (m)	Expected Damage
1	over 979	119–153	1.2–1.5	Minimal
2	965–979	154–177	1.6–2.4	Moderate
3	945–964	178–209	2.5–3.6	Extensive
4	920–944	210–250	3.7–5.4	Extreme
5	below 920	over 250	over 5.4	Catastrophic

Which graph best shows the relationship between the category number of a hurricane and the expected damage from the storm?
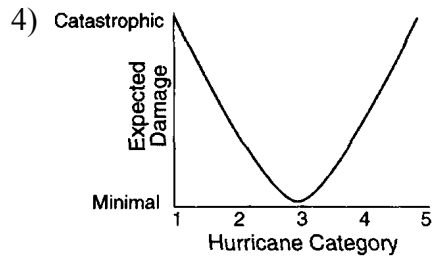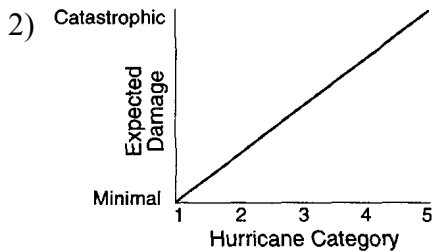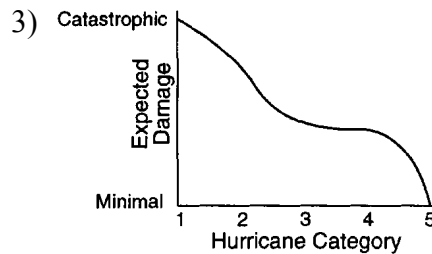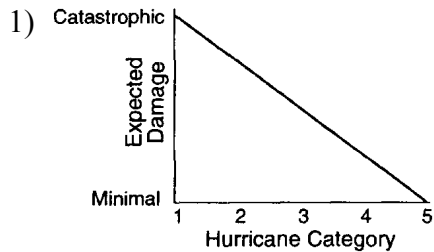
Answer Key
Weather Practice Test

1.   2
2.   4
3.   1
4.   2
5.   3
6.   4
7.   4
8.   2
9.   3
10.   3
11.   2
12.   2
13.   2
14.   3
15.   1
16.   2
17.   1
18.   3
19.   4
20.   1
21.   3
22.   3
23.   3
24.   3
25.   3
26.   1
27.   4
28.   2
29.   3
30.   2