

weather 1

1. Sharon woke up on a sunny morning and ate breakfast. Then she looked outside and saw tall, quickly-forming clouds. The clouds looked ready to rain. When she turned on the TV, she saw just what she thought—a forecast for sudden rains. What most likely caused the change in weather?

- A. lack of wind
 - B. an expanding warm air mass
 - C. a cold front overtaking a warm air mass
 - D. a warm front overtaking a cold air mass
-

2. Strong winds blowing up through thunderstorm clouds are called updrafts. These updrafts can send raindrops to high altitudes where the raindrops freeze. More updrafts may keep the frozen raindrops suspended at high altitudes where additional layers of ice may be added. When the weight of the frozen rain is too heavy to stay in the updraft, it falls to the ground.

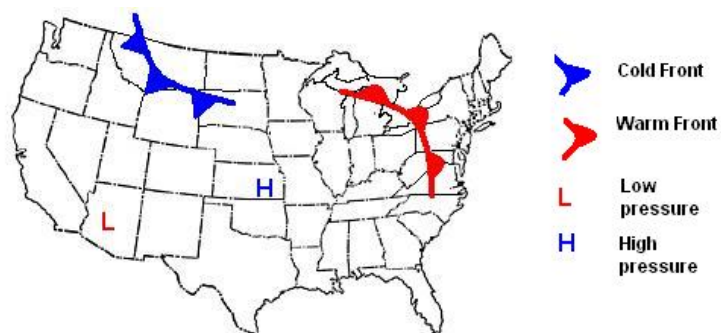
This is an example of which form of precipitation?

- A. snow
 - B. sleet
 - C. hail
 - D. rain
-

3. Violently rotating columns of air with winds reaching speeds of nearly 400 mph are called

- A. tornadoes.
 - B. tropical storms.
 - C. wind storms.
 - D. hurricanes.
-

4.



Look at the map above. What type of weather is the northwest having?

- A. foggy weather
 - B. cold weather
 - C. snowy weather
 - D. warm weather
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5.





Cold Front

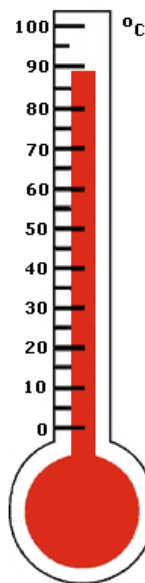
When cold air moves under warm air, a cold front forms. The steep slope of the cold front tends to suddenly push the warm air up and create vertical clouds. Given this information, which of the following cloud types and weather conditions would most likely result from a fast moving cold front?

- A. stratus clouds and drizzly rain
 - B. cumulus clouds and clear weather
 - C. cumulonimbus clouds and thunderstorms
 - D. cirrus clouds and snow
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6. Wispy, thin, white clouds can be seen high in the sky on a pleasant day. Which type of clouds are these?

- A. cirrus
 - B. stratus
 - C. cumulonimbus
 - D. altostratus
-

7. Look at the thermometer below.



Approximately what temperature does the thermometer read?

- A. 74°C
 - B. 89°C
 - C. 81°C
 - D. 94°C
-

8. Air masses move from areas with high pressure (such as the poles of the Earth) to areas with low pressure (the equator). The temperature and moisture of an air mass depend on where it is formed.

A continental tropical air mass is _____ and _____.

- A. warm, dry
 - B. cold, dry
 - C. cold, moist
 - D. warm, moist
-

9. Meteorologists often talk about warm fronts and cold fronts, and how they contribute to various weather conditions like storms. What is a front?

- A. an area of low pressure bringing low clouds and rain
 - B. boundary between two air masses of different temperatures and/or humidity levels
 - C. height of the lowest cloud layer when the sky is reported to be overcast
 - D. fog caused when warm, humid air moves across cold ground or water and cools below its dew point
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10. An air mass that formed over water is going to bring _____ weather.

- A. dry
 - B. warm
 - C. moist
 - D. cold
-

11. A swirling, high-speed windstorm begins over the ocean. It contains heavy rains. The wind and rain rotate around a center of low pressure. When the winds inside this tropical cyclone reach 74 mph, which of the following occurs?

- A. tropical storm
 - B. tropical depression
 - C. thunderstorm
 - D. hurricane
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12. Which of the following types of precipitation is most likely to occur during the summer?

- A. snow
 - B. hail
 - C. freezing rain
 - D. sleet
-

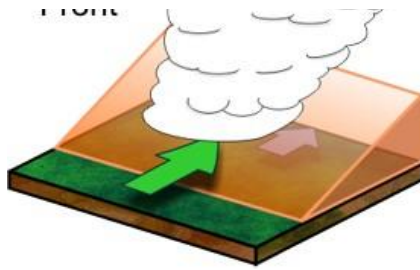
13. Clouds are formed when water vapor in the atmosphere becomes a liquid and condenses. Condensation is a result of the difference in which of the following?

- A. air pressure and air temperature
 - B. air pressure and wind speed
 - C. air temperature and dew point temperature
 - D. dew point temperature and ocean temperature
-

14.

Warm
Front





When warm air moves over cold air, a warm front forms. The warm air tends to rise along a gentle slope above the cold air and form layers of clouds.

Given this information, which of the following cloud types and weather conditions would most likely result from an incoming warm front?

Please note: the cloud in the above image may not be realistic in size or shape.

- A. stratus clouds and drizzly rain
- B. cumulus clouds and clear weather
- C. isolated cirrus clouds and clear weather
- D. cumulonimbus clouds and thunderstorms

15. A cold air mass and a warm air mass are predicted to meet. What type of weather can be expected between the two air masses?

- A. dry weather
- B. stormy weather
- C. warm weather
- D. cold weather

16. Weather balloons, such as the one shown below, help collect information about the weather. The balloons can get information such as temperature, air pressure, humidity, wind speed, and direction.



If the collected information showed that the temperature was 10°C , there was little pressure, and the wind speed was 75 mph, what type of weather would it probably be outside?

- A. cold and wet
- B. warm and windy
- C. cold and windy
- D. warm and sunny

17. Which two factors have the greatest influence on the weather?

- A. rain and wind
- B. heat and wind speed

- C. the Sun and water
 - D. water and clouds
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18. Thunderstorms can produce several inches of rainfall within a short time. Which of the following can be a result of this heavy rainfall?

- A. hail
 - B. hurricane
 - C. tropical storm
 - D. flooding
-

19. A sling psychrometer is made using two thermometers, one with a wet bulb and one with a dry bulb, which are held together by a handle. The two thermometers are moved through the air, and the two temperatures are recorded.

The temperatures recorded from a sling psychrometer are compared with a chart in order to determine the _____.

- A. air pressure
 - B. wind speed
 - C. relative humidity
 - D. average temperature
-

20. The amount of water vapor in the air is referred to as

- A. humidity.
 - B. condensation.
 - C. temperature.
 - D. precipitation.
-

21. Atmospheric pressure is measured with a/an _____ and is commonly expressed in _____ .

- A. anemometer, kilometers per hour
 - B. hygrometer, a percentage
 - C. thermometer, degrees Celsius
 - D. barometer, millibars
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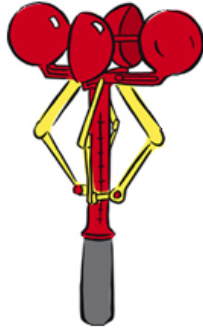
22. Clouds are formed when water vapor cools and condenses in a liquid state. Eventually, the air in the cloud becomes saturated with water. The water droplets that create the cloud combine, forming larger droplets which become heavier. What happens next?

- A. The water is absorbed into the atmosphere.
 - B. The water's weight causes the cloud to move, which we feel as wind.
 - C. The water droplets evaporate and become water vapor again.
 - D. The water droplets fall to the Earth as rain.
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23. The sky is covered with low, gray clouds, resembling a fog. Which type of clouds are these?

- A. cirrus
- B. nimbo-form
- C. stratus
- D. cumulonimbus

24.



An anemometer, like the one shown above, is used to measure _____.

- A. temperature
 - B. rainfall amount
 - C. wind speed
 - D. humidity
-

25. Which statement best describes the driving force behind all the weather on Earth, from local weather systems to large-scale storms?

- A. The Sun heats the atmosphere unevenly, so temperatures and pressures are constantly equalizing.
 - B. The ocean holds the heat of the Sun more efficiently and for longer periods than land.
 - C. The Greenhouse Effect ensures that some of the Sun's heat is always trapped close to the Earth's surface.
 - D. The Coriolis Effect curves the motion of wind due to the Earth's counter-clockwise rotation.
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26. During the winter in the North, locations south of large lakes often experience big snowstorms. The reason for this is something called the **lake effect**. Which of the following correctly describes the lake effect?

- A. When cold air moving down from the North moves over a large cold body of water, the air is cooled even more and stays close to the ground, causing large snow storms.
 - B. When cold air moving down from the North moves over a large warm body of water, the air is warmed quickly and rises, causing large snow storms.
 - C. When cold air moving down from the North moves over a large warm body of water, the air is warmed quickly and stays close to the ground, causing large snow storms.
 - D. When cold air moving down from the North moves over a large cold body of water, the air is cooled even more and rises, causing large snow storms.
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27. Consider the following scenario. A large air mass in the atmosphere rises quickly. Tall, dark, puffy clouds form. Inside the clouds, strong air currents cause water droplets and ice crystals to crash into each other. This friction creates charges of electricity in the cloud.

Which of the following is a result of this activity in the clouds?

- A. evaporation
- B. precipitation
- C. cold front

- C. cold front
 - D. lightning
-

28. Which of the following instruments is used to measure atmospheric pressure?

- A. anemometer
 - B. thermometer
 - C. barometer
 - D. hygrometer
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29. Tall, dense clouds fill the sky during a thunderstorm, bringing hail, lightning, and the possibility of tornadoes. Which type of clouds are these?

- A. stratus
 - B. altostratus
 - C. cirrus
 - D. cumulonimbus
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