Name: Date:
Earth Science Period:

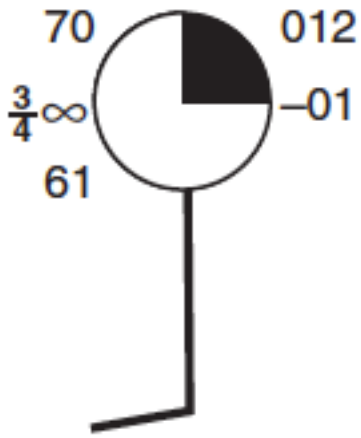
Earth Science Regents Review Workbook

Part 4: Weather

Part 4: Weather

Station Models

1. Decode the station model below.



Temperature: _____

Visibility: _____

Dew point: _____

Present Weather: _____

Cloud Cover: _____

Wind Direction: _____

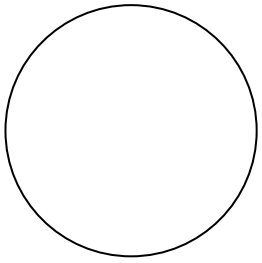
Wind Speed: _____

Barometric Pressure: _____

Barometric Trend: _____

Precipitation: _____

2. Construct a station model using the information below.



Temperature: **46˚F**

Visibility: **¼ mile**

Dew point: **45˚F**

Present Weather: **Rain**

Cloud Cover: **75%**

Wind Direction: **Northeast**

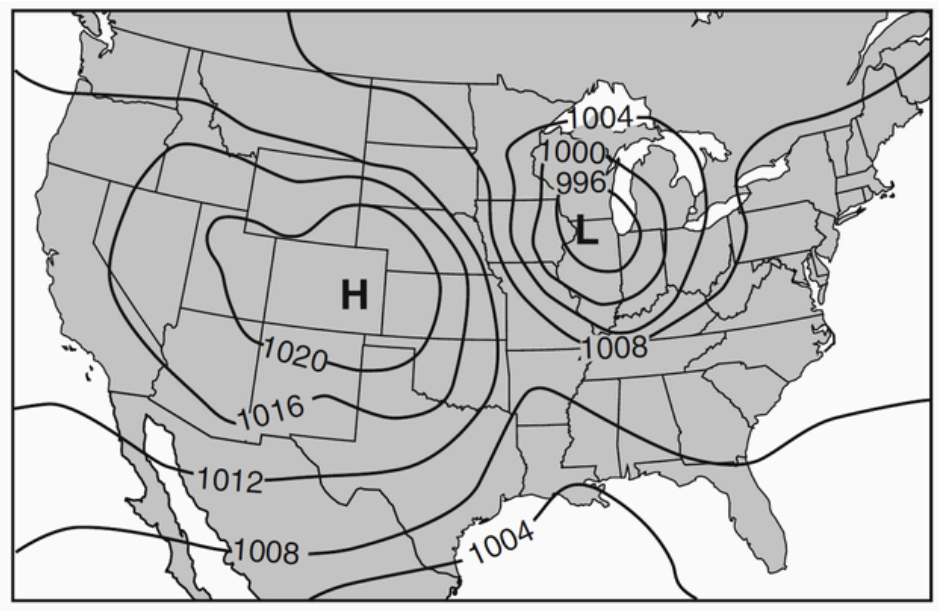
Wind Speed: **25 knots**

Barometric Pressure: **996.9 mb**

Barometric Trend**: Decreased 0.6 mb**

Precipitation: **0.15 inches**

High and Low Pressure Characteristics

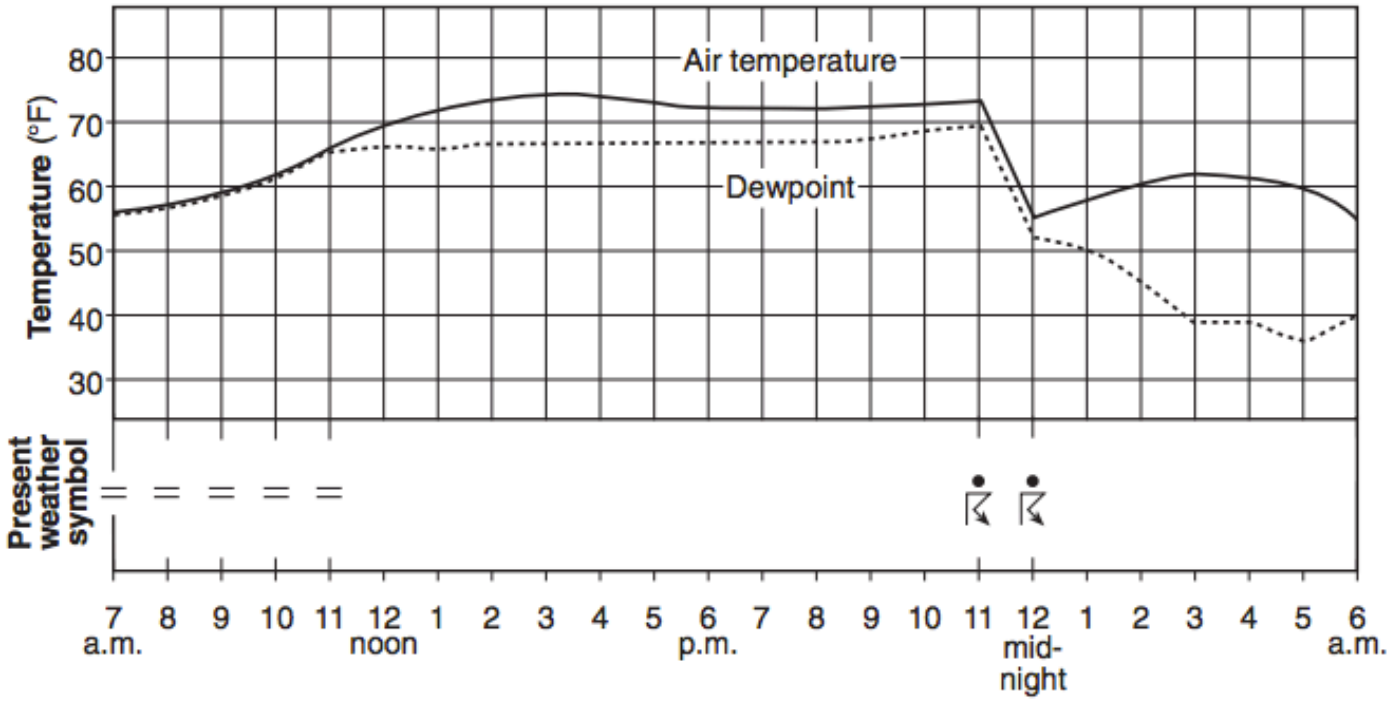


Compare high pressure and low pressure using the chart below.

	High pressure	Low pressure
Temperature		
Humidity		
Cloud cover		
Precipitation		
Vertical air movement		
Surface wind circulation		
Drawing of surface wind circulation		

Part 4: Weather

Temperature, Dew Point, and Relative Humidity



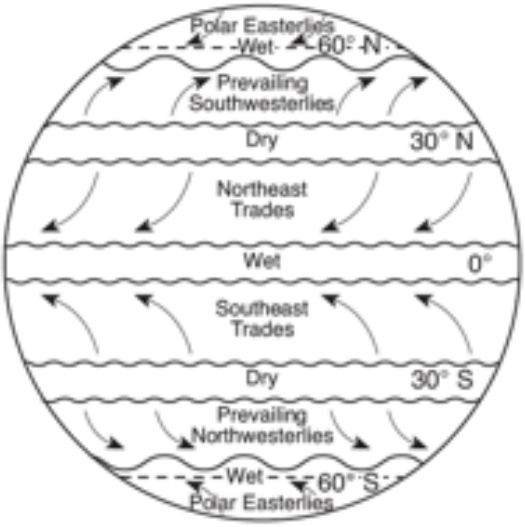
1. What type of weather is low pressure associated with? _____
2. What type of weather is high pressure associated with? _____
3. As the air temperature approaches the dew point temperature, what happens outside? _____

   _____
4. As the air temperature and dew point temperature get farther apart, what happens to the weather outside? _____
5. Clouds form when warm air rises, expands, and cools to the _____.
6. In the diagram above, which two time blocks represent the best chances for precipitation? _____

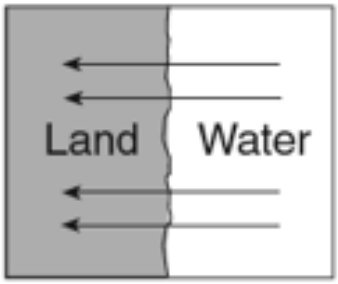
   _____
7. What type of weather is occurring between 11 and midnight at this location? _____
8. As air temperature approaches the dew point, what happens to the relative humidity? _____

   _____
9. How would you describe the humidity for air that is saturated? _____

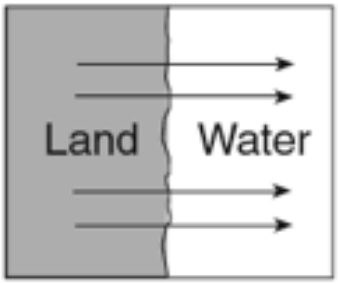
Winds



A

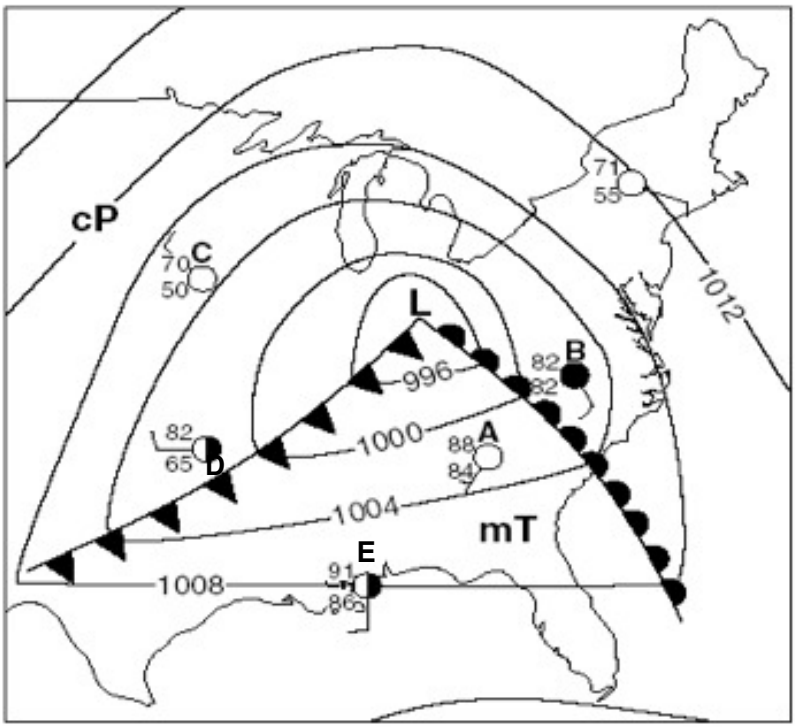


B



1. In which direction do winds in the Northern Hemisphere bend? _____
2. In which direction do winds in the Southern Hemisphere bend? _____
3. At which latitudes do surface winds converge? _____
4. At which latitudes do surface winds diverge? _____
5. Which diagram shows a land breeze? _____
6. At what time of day does a land breeze occur? _____
7. Which diagram shows a sea breeze? _____
8. At what time of day does a sea breeze occur? _____
9. What causes winds? _____
10. What are isolines of equal pressure called? _____
11. How do you determine where the fastest winds are on a weather map? _____

Weather Maps



1. What type of weather is associated with low pressure? _____

2. On the map above, draw where the precipitation will be found for both the warm front and the cold front.

3. Station model B has an air temperature and dew point of 82˚F. What is the relative humidity at this location? _____

4. In which direction are the winds blowing around the low pressure center? _____

5. Which station model just experienced short-lived but torrential rains? _____

6. Which station model has the driest air? _____

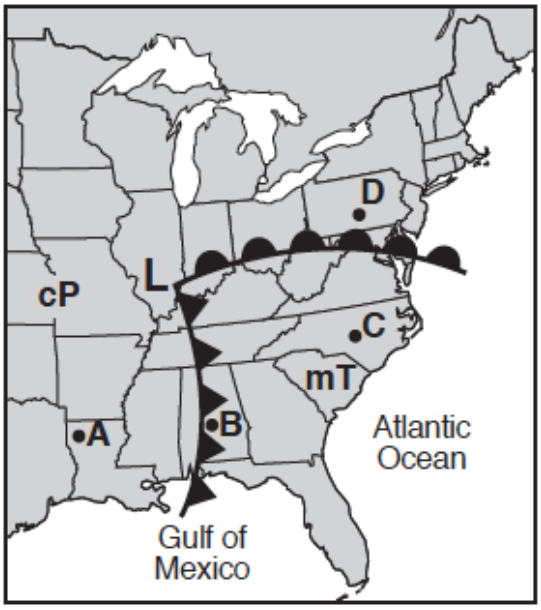
7. Which station model is experiencing slow, steady precipitation? _____

8. Which two station models have a flood warning with dangerous lightening over the next few hours? _____

Part 4: Weather

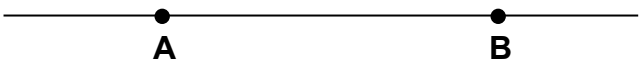
Weather Map Practice

Base your answers to questions 1 through 5 on the weather map below and on your knowledge of Earth Science. The map shows a low-pressure system with two fronts extending from its center (L). Points A, B, C, and D represent locations on Earth's surface. Two different air masses are labeled.

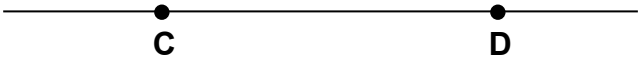


1. Draw the cross section of the frontal boundary between the two cities indicated. Draw arrows to show the general direction of air movement:

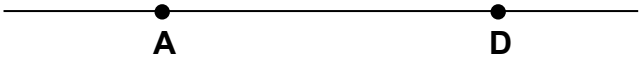
   a. Cities A and B:



   b. Cities C and D:



   c. Cities A and D:



2. Which cities are currently experiencing precipitation? _____

3. In which direction is the low-pressure center winds moving? _____

4. In which direction will the low-pressure center move towards? _____

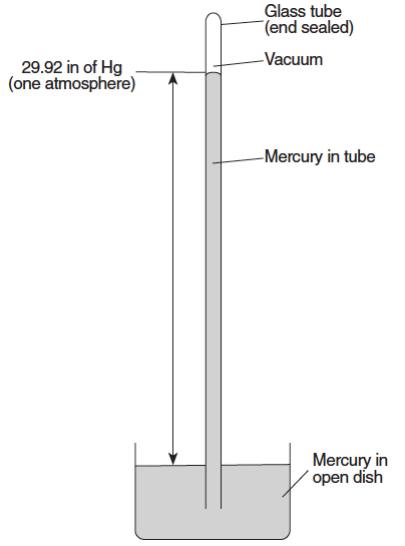
5. Describe characteristics and region of origin for the air masses shown on the map:

   a. cP air mass: _____

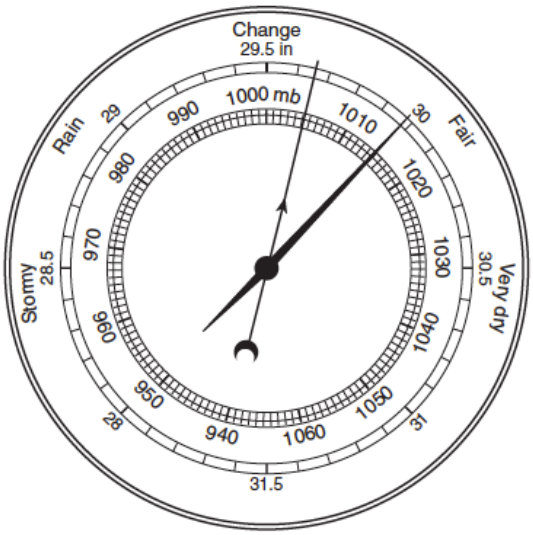
   b. mT air mass: _____

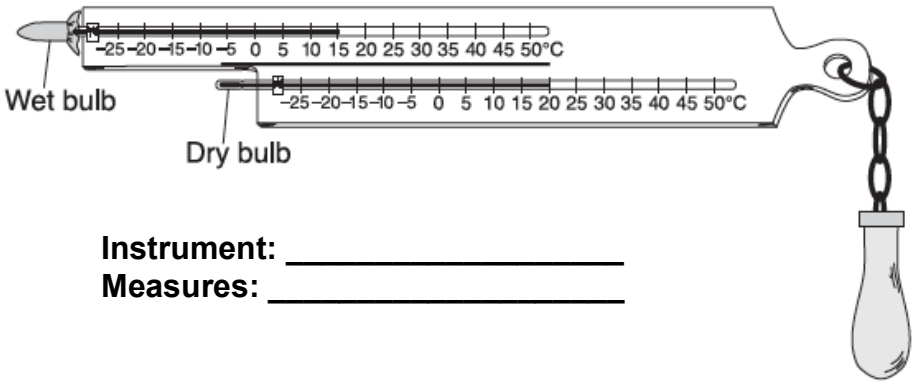
Weather Instruments Diagrams (& What They Measure)

Instrument: _____
Measures: _____



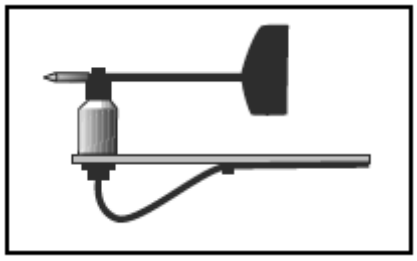
Instrument: _____
Measures: _____





Instrument: _____
Measures: _____

Instrument: _____
Measures: _____



Instrument: _____
Measures: _____