Weather Variables

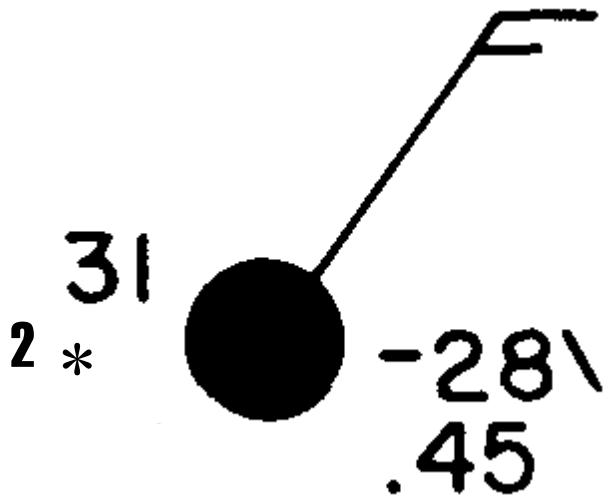
Unit Review

Name_____

1. Be sure you know the meaning of the following words. Quiz each other and place a check next to those you know.

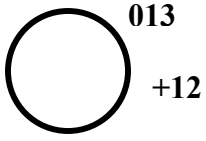
	air pressure		millibar
	barometer		pressure gradient
	barometric pressure		relative humidity
	condensation		sling psychrometer
	dew point		weather station model
	knot		

2. Review the weather station model and data below. Record each weather observation in the proper space:
Be sure to include units



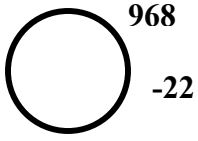
cloud cover	_____
temperature	_____
dew point	30^0F
visibility	_____
wind direction	_____
wind speed	_____
air pressure	1013.0
pressure trend	_____
precipitation	_____
current weather	snow

3. For each of the station models below record the current air pressure and the pressure 3 hours ago.



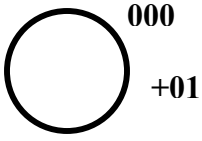
Pressure
current:_____

3 hrs ago: _____



Pressure
current:_____

3 hrs ago: _____



Pressure
current:_____

3 hrs ago: _____

4. Convert the following measurements using the proper page from the *Earth Science Reference Tables*:

$27^{0}F$ = _____^{0}C $52^{0}F$ = _____^{0}C 28.92" = _____mb 30.35" = _____mb

$5^{0}C$ = _____^{0}F $22^{0}C$ = _____^{0}F 998.0mb = _____" 1033.0mb = _____mb

5. Determine the dew point and relative humidity based on the given wet and dry bulb temperatures.

Dry bulb = $22^{0}C$
Wet bulb = $20^{0}C$

Dew Point = _____

Relative Humidity = _____

Dry bulb = $16^{0}C$
Wet bulb = $16^{0}C$

Dew Point = _____

Relative Humidity = _____

Why doesn't the wet bulb temperature drop when the relative humidity is 100%?_____

What might occur when the temperature and the dew point are equal?_____

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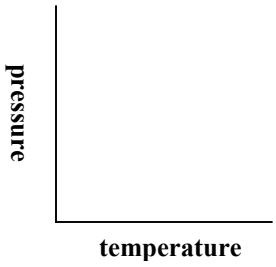
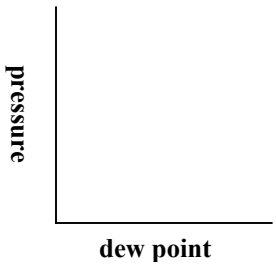
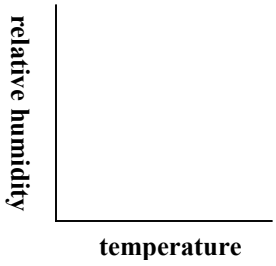
6. For each pair of weather variables draw the graph that describes the relationship between them and explain why that relationship exits.



Explanation:_____
_____
_____
_____
_____



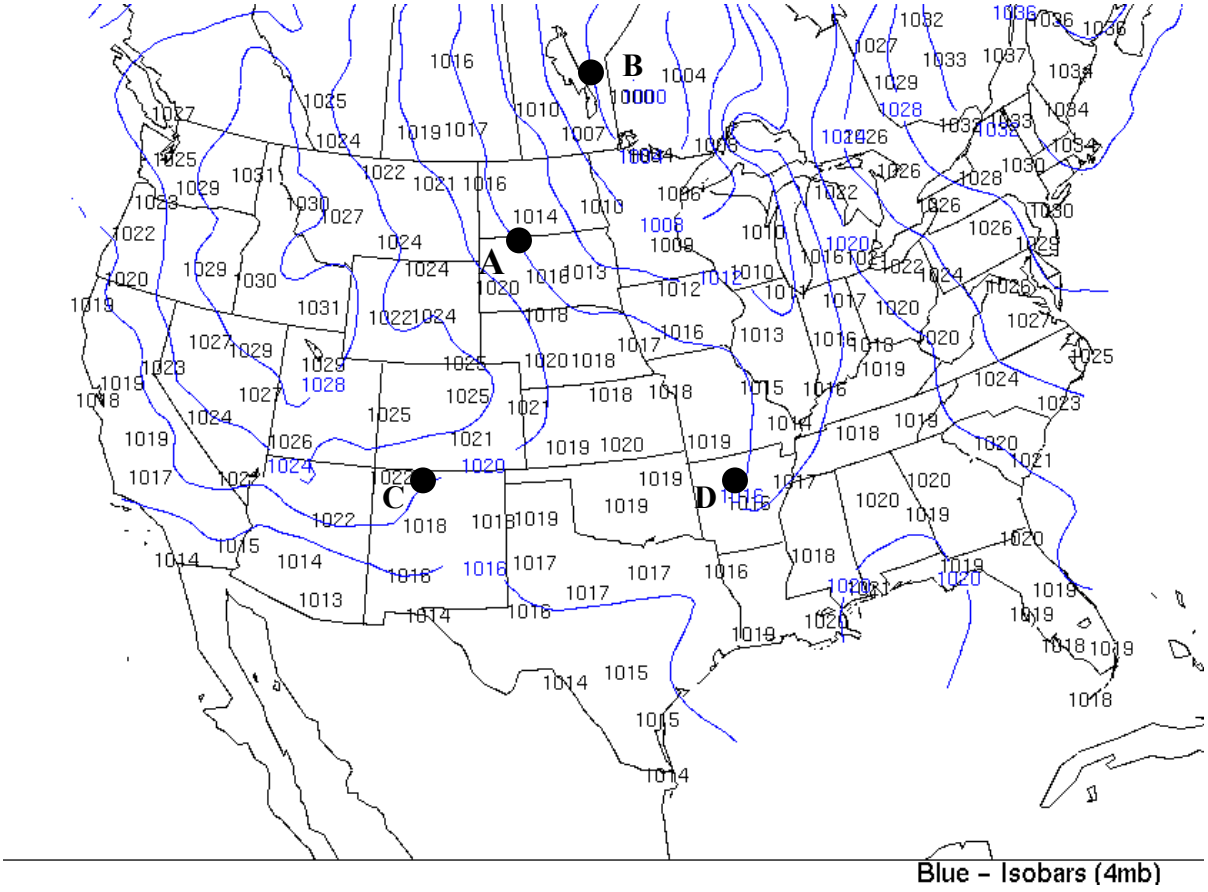
Explanation:_____
_____
_____
_____
_____



Explanation:_____
_____
_____
_____
_____

7. Use the map below to complete the following:

a. Locate and label at least one high (H) and one low pressure (L) system.
b. Heavily shade an area that is likely experiencing cloudy or rainy weather.
c. Lightly shade in an area that likely has strong winds.
d. Calculate the pressure gradient from point A to B.
e. Calculate the pressure gradient from point C to D.



calculate pressure gradients here
(be sure to include units)

8. What instrument is used to measure each of the following:

air pressure _____ wind speed _____

dew point _____ relative humidity _____

9. Using arrows show how wind will circulate around the high (H) and low (L) pressure systems.

H L

10. The diagram below represents a beach made of granite sand on a typical sunny summer day. Complete the following items that help to explain why wind blows in coastal regions.

a. Calculate the number of calories needed to raise 5 grams of the granite sand by 5°C.
b. Next calculate the number of calories needed to raise 5 grams of the water by 5°C.
c. Label which likely become warmer and which will be cooler.
d. Label where the higher (H) and lower (L) pressure air will be found.
e. Finally use an arrow to show the direction the wind will likely blow.