

# FRONTS + LOW PRESSURE SYSTEMS

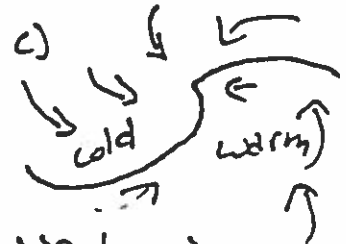
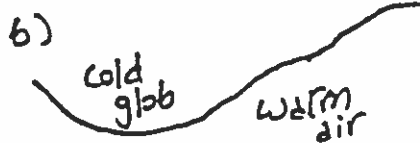
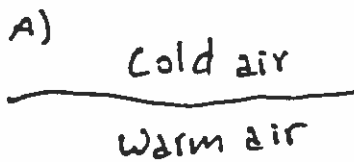
Number \_\_\_\_\_

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Date \_\_\_\_\_ Period \_\_\_\_\_

Some things you need to know about low pressure systems

- I. Low pressure systems (also called cyclones) form in the mid latitudes (between the equator and poles).
- II. The low pressure systems form at the boundary between cold polar air and warm tropical air. (A)
- III. A low pressure system starts to form when a glob of cold dense polar air pushes into the warmer tropical air (b)

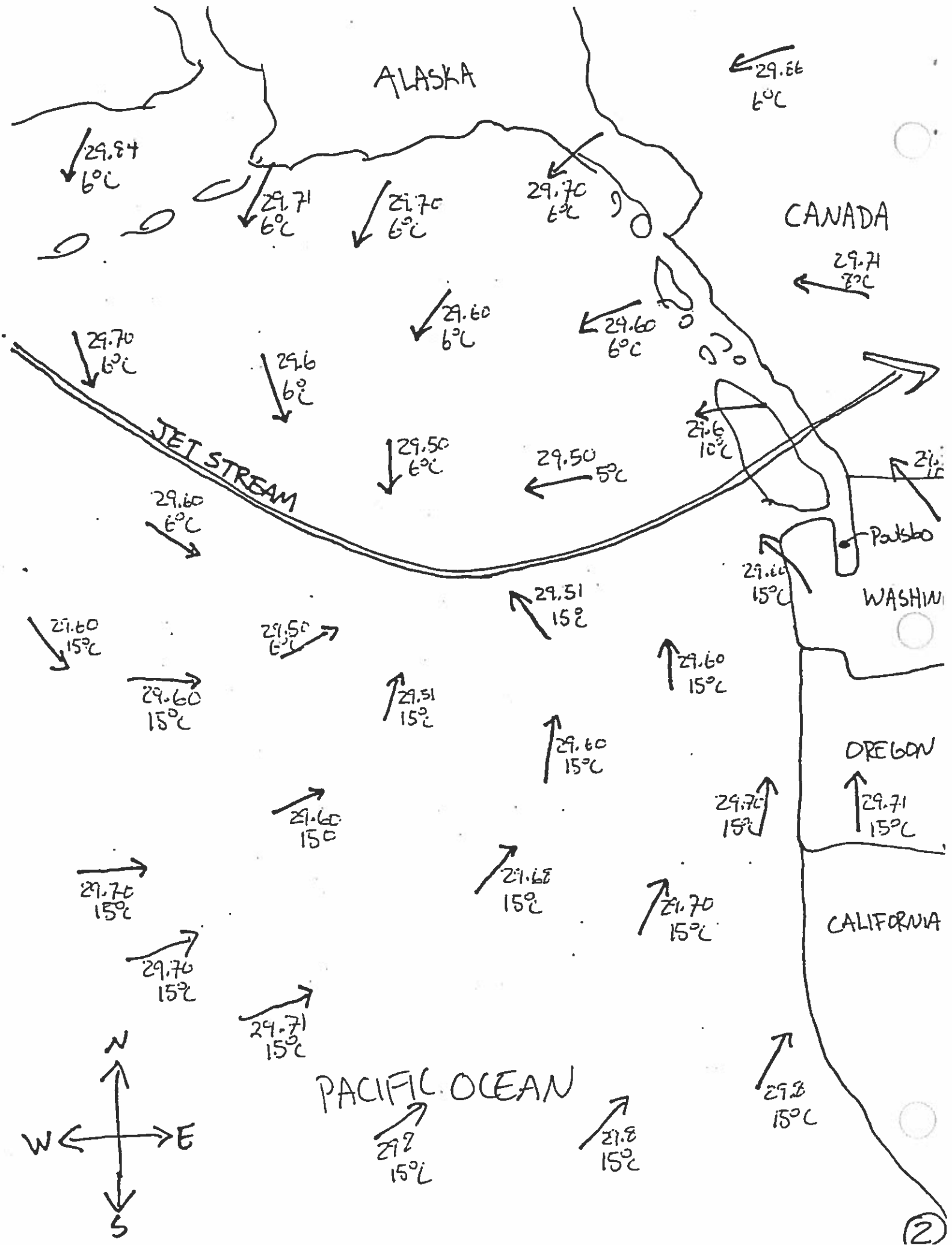


IV These pulses or globs of warm and cold air begin to spin into each other and start to rise. This becomes the low pressure area. The air starts spinning because of the earth's rotation. This is called the Coriolis effect.

V Along this boundary between the Tropical and Polar air is a river of wind high in the atmosphere called the jet stream. The jet stream is a fast wind that moves from west to east around the world at mid latitudes. It is created by the differences in pressure from the tropic + polar regions, and the earth's rotation.

VI The path of the jet stream is important, because the jet stream creates the track that the low pressure systems move along. So if you know where the jet stream is flowing, you know where the storms will go.

USE THE MAP ON THE NEXT PAGE TO ANSWER QUESTIONS



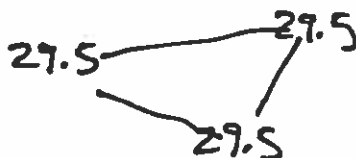
- A) 29.60  
 B) 6°C  
 C) ↗

- A) Air pressure — the lower the number the lower the pressure  
 B) Air temperature  
 C) Wind Direction

① put a  $\angle$  in the spot where the pressure is the lowest.

② connect the air pressures that are the same with lines

example:



These lines are called isobars

③ When the storm hits land, will the center of the low pressure hit Alaska, Canada, Washington, or Oregon? Explain.

④ The wind is rotating into the low pressure area. Explain why the air spins.

⑤ Why does the air flow into the low pressure area? Explain.

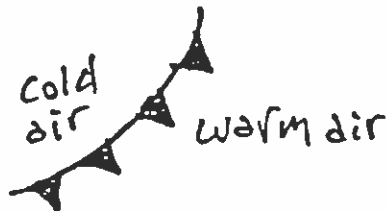
⑥ When the low pressure area approaches, what will the wind direction in Poulso be?

What will the wind direction be when in Poulso when the low pressure area has gone by?

# WEATHER FRONTS

Some things you need to know:

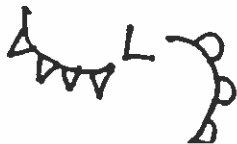
- I. A front is a narrow boundary zone between 2 different air masses. It is a zone across which the wind, temperature, humidity, and weather can change rapidly.
- II. Rain is associated with fronts because the colliding air masses force air to rise. Then the air gets cold, it contracts, and rains.
- III. COLD Fronts are masses of cold air moving into warm air. The weather is usually short and intense (rain) followed by a drop in air temperature. Thunderstorms and tornados are found in cold fronts because the cold air pushes the warmer air up very quickly.
- IV. WARM Fronts are masses of warm air moving into cold air. The air doesn't rise as fast as cold fronts. So the weather is a long steady rain followed by warmer air temperatures.
- V. The boundary for a cold front looks like this:



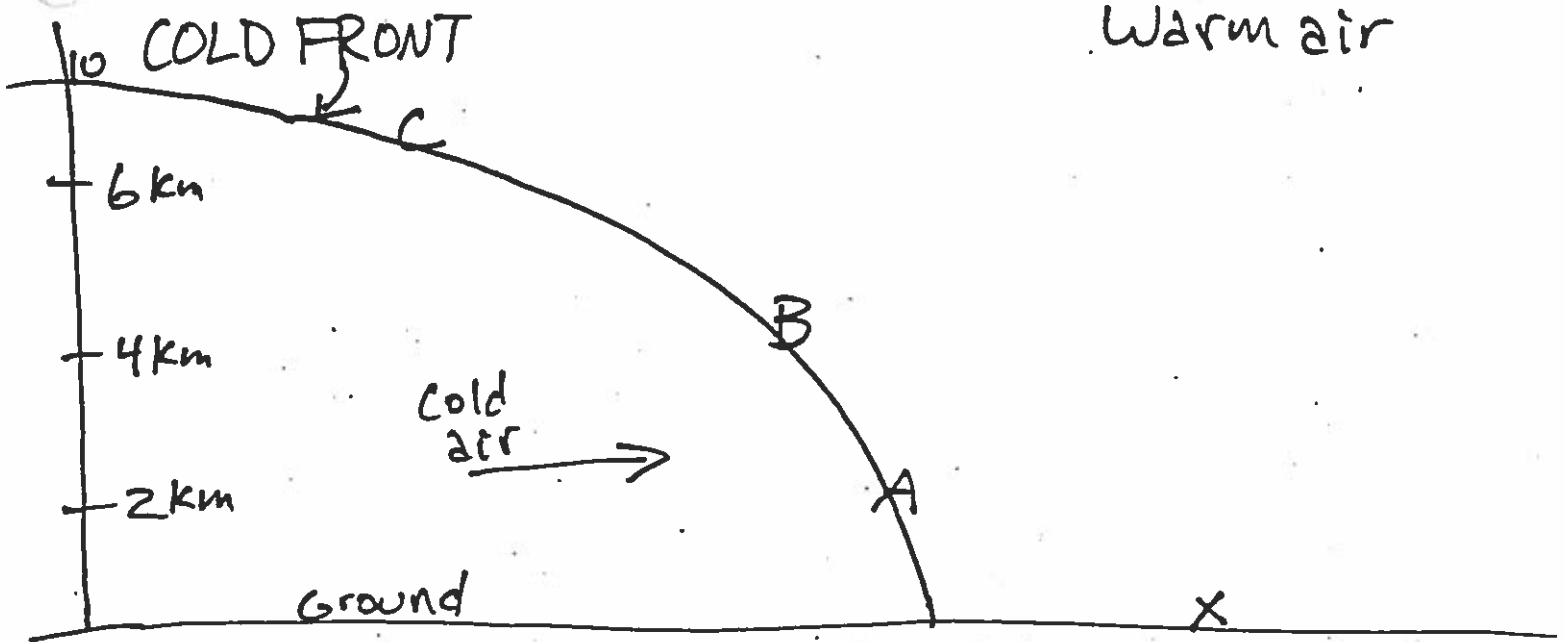
- VI. The boundary for a warm front looks like this:



7. Look on the map - you should notice a rapid change in temperature along some lines. Draw in the warmfront and cold front boundaries. Your map should look kind of like this:



From the ground, fronts look like this:



⑧ For each letter, Draw the cloud you would see at that level (draw it on the letter) and write the cloud name next to it

⑨ Explain in terms of temperature and energy how the mass of cold air forms clouds.

⑩ If you were standing on the ~~clouds~~ X, list the order of clouds that you would see when the cold front passes over you.

