**What air masses affect the climate in North America?**

**Air masses:**

- Air masses are large bodies of air in which temperature and moisture conditions are approximately the same throughout the mass of air.

- Air masses are classified according to:

1. **their place of origin**
   **Example:** high latitude: *arctic*, low latitude: *tropical*

2. **formation over land or water**
   **Example:** land: *continental*, ocean: *maritime*

3. **stable vs. unstable air**
   : in stable air masses, the lower layers of air are cooler than air above, therefore no vertical movement of air takes place.
   : in unstable air masses, the lower layers of air are warmer than the air above so air can readily rise

- Air masses take on the characteristics of the areas over which they form. *Example:* In January, the Continental Arctic air mass develops over the northern part of the land that is covered with ice. This air will bring cold and dry conditions further south.

Air masses are classified according to their place of origin. The following chart will examine the major air masses that affect the climate in North America.

| Air Mass | Symbol | Characteristics in Winter | Characteristics in Summer |
|---|---|---|---|
| **Continental Arctic** | | | |
| **Maritime Arctic** | | | |

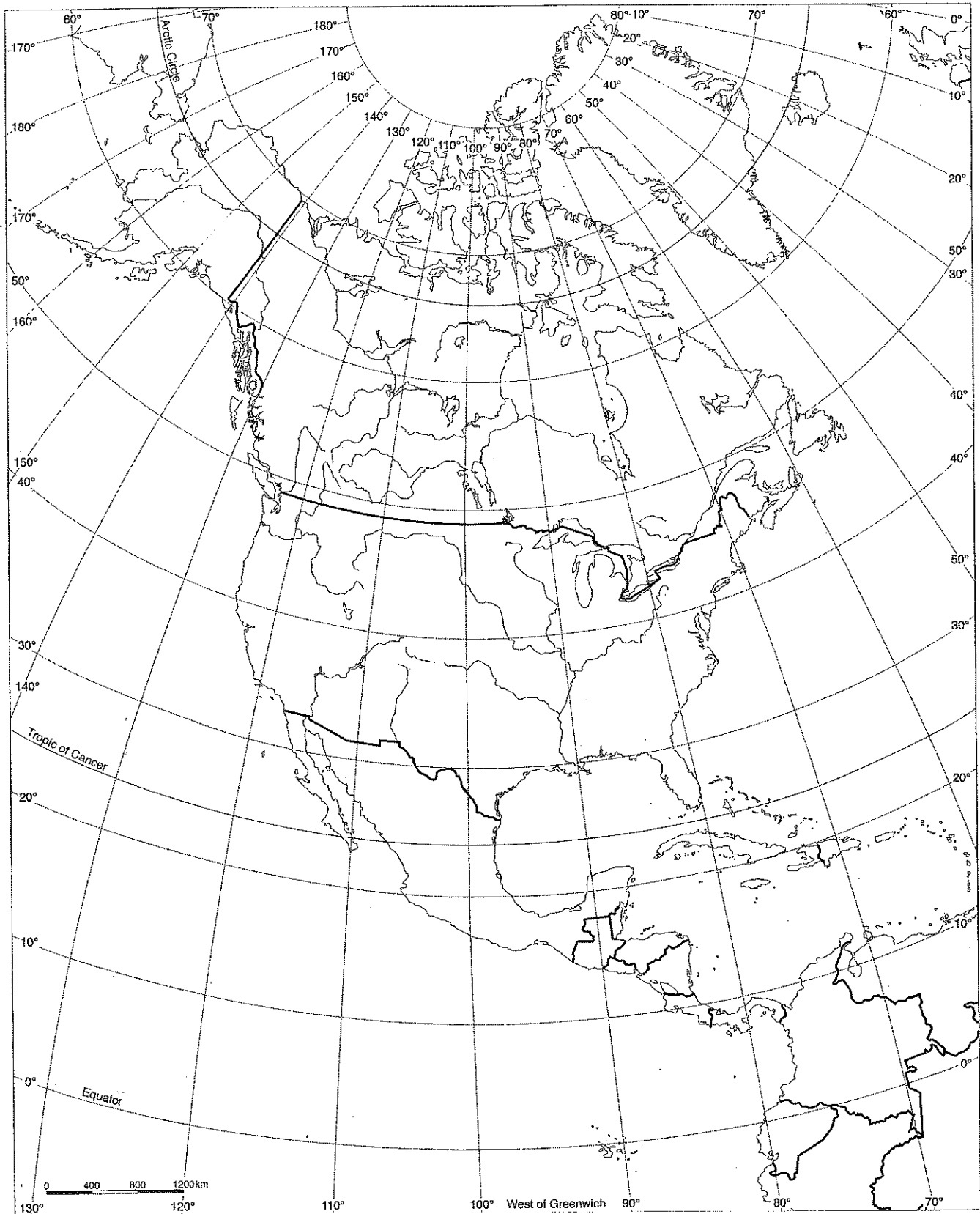| | | | |
|---|---|---|---|
| **Maritime Polar** | | | |
| **Continental Tropical** | | | |
| **Maritime Tropical** | | | |

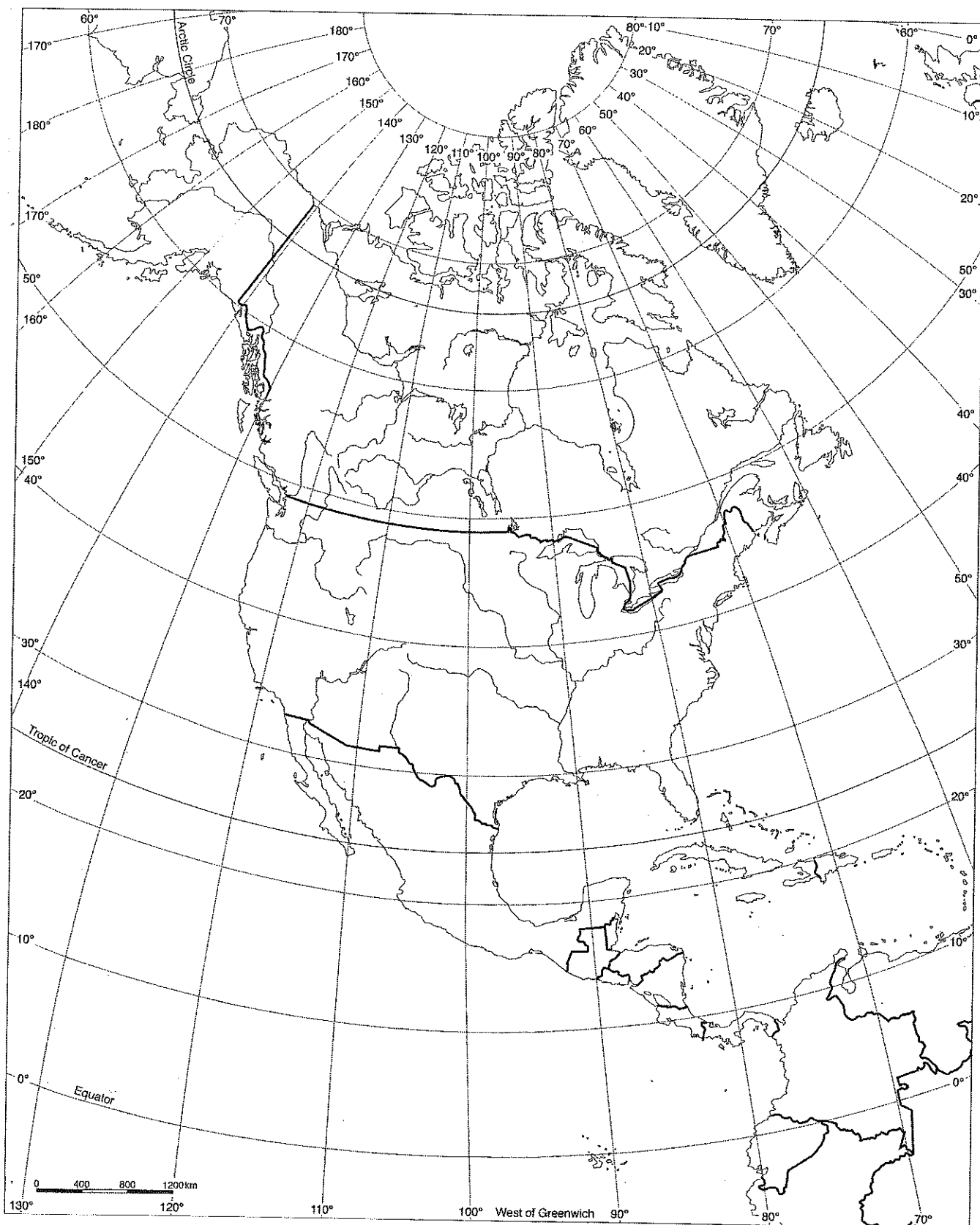**Mapping Assignment: Air Masses and Weather Trends**

Name:

Period:

Using the Atlas pg. 8 indicate on the map below where the air masses are located. There are two maps one for January and one for July. **Label the air masses using the symbols from your chart and colour each air mass a different colour**. Once completed answer the questions that follow.

**January**

**July**

**Questions:**

1. Identify the air masses that would tend to dominate the weather at each of the following locations at the times of the year indicated:

a) Saskatchewan in Jan. _____

b) Great Lakes area in Jan. _____

c) Washington, DC, in July _____

d) Los Angeles, California, in July _____

e) Vancouver, BC, all year long _____


2. Consider the following weather reports and suggest what may have caused the weather conditions.

a) Windsor, Ontario: "The weather for the next few days- July, 9,10, 11 will continue to be hot, hazy, and humid."




b) Montreal, Quebec: "The weather for tomorrow- January 9 will be crisp and clear with lows of -22°C and highs around -15°C."




c) Vancouver, BC: "Showers will dominate the weather for the next few days, with cool temperatures and westerly winds. "




d) Regina, Saskatchewan: "The hot, hazy, and humid weather will be replaced tomorrow with the arrival of cool air from the northwest."




e) Prince Rupert, BC: "No relief in sight from the cloudy, rainy conditions that have dominated the weather for the past three days."