

Chapter 11 Review: Air masses

- What is an air mass?
- What conditions are needed for an air mass to form?
- Where are the source regions for air masses, i.e., where do they form?
- What two characteristics are used to catalog air masses?
- What 3 names characterize air mass temperature as warm, cold, or very cold?
- What 2 names characterize air mass humidity as dry or moist?

Air Masses

- Is high or low pressure typically at the center of air masses?
- What kind of air mass usually affects Florida?
- What kind of air mass usually affects Michigan?
- Why don't air masses typically form in mid-latitudes?
- What is air mass modification?
- Give an example of air mass modification.
- What is "lake effect snow"? Where in the US is it most common?

Question for Review #11, p. 306

11. What type of air mass would be responsible for:

- Heavy snow showers & low temps at Buffalo, NY?
 - Hot, muggy weather in the Midwest and East?
 - Daily afternoon thunderstorms along the Gulf Coast?
 - Heavy snow showers along the W slope of the Rockies?
- Question for Thought 2 (p. 307). Explain how an anticyclone (region of high pressure) during autumn can bring record breaking low temperatures and cP air to the SE states, and, only a few days later, it can be bring very high temperatures and mT air to the same area.

Fronts

- What is a front?
- What is a
 - ◆ Stationary front? Cold front? Warm front?
 - ◆ "Back door" cold front?
 - ◆ Occluded front?
- What is the typical slope of a front?
- Which is typically steeper, a cold front or a warm front?
- Are cumulonimbus clouds more common at cold fronts or warm fronts? Why?
- Are nimbostratus clouds more common at cold fronts or warm fronts? Why?

Fronts

- Which kind of front, warm or cold, more commonly has:
 - ◆ A greater contrast between warm and cold air?
 - ◆ More intense precipitation?
 - ◆ Steady, precipitation lasting hours?
- What kinds of fronts are transition zones between:
 - ◆ Tropical and polar air? (2 types)
 - ◆ cP and mP air? (2 types)
 - ◆ cT and mT air? (1 type)

Frontal Passage

- Imagine you are in warm air and a cold front approaches. What weather changes do you expect in winds, temperature, pressure, clouds, precipitation, and dew point? (See table 11.2 on p. 300.)
- Imagine you are in cold air and a warm front approaches. What weather changes do you expect in winds, temperature, pressure, clouds, precipitation, and dew point? (See table 11.3 on p. 302.)

Question for Review #15, p. 307

15. Based on the following weather forecasts, what type of front will most likely pass the area? (See map, p. 297, for c, d, & a.)

- (c) Increasing cloudiness and warm today, with possibility of showers by evening. Turning much colder tonight. Winds SW, becoming gusty and shifting to NW by tonight.
- (d) Increasing high cloudiness and cold this morning. Clouds increasing and lowering this afternoon, with a chance of snow or rain tonight. Precipitation ending tomorrow morning. Turning much warmer. Winds light easterly today, becoming SE tonight and SW tomorrow.
- (a) Light rain and cold today, with temperatures just above freezing. SE winds shifting to W tonight. Turning colder with rain heavy and possibly changing to snow. (Cold occluded.)
- (b) Cool today with rain becoming heavy at times by this afternoon. Warmer tomorrow. Winds SE becoming W by tomorrow morning. (A warm occluded front is more likely than a warm front because precip is heavy and winds shift to W. For a warm front, precip is light to moderate and winds shift to S or SW. See tables 11.3 (p. 302) and 11.4 (p. 305).)