

Chapter 8 Review: Air Pressure, Forces and Wind

- What is a mercury barometer? Aneroid barometer? How do they work?
- What is the average sea level pressure in inches of mercury? Millibars ? Hectopascals ?
- By roughly what percent do you have to change the surface pressure to get a "large" pressure change? Answer: Weather rarely changes the surface pressure by more than a few percent.
- How does temperature of an air column affect what the air pressure will be several kilometers above the surface?

Barometers and Pressure

- Why can a barometer be used as an altimeter? (Even planes with GPS use a barometric altimeter as an independent piece of position information.)
- What does it mean to adjust a surface pressure reading to sea level?
- Why are surface pressure readings adjusted to sea level?
- What is an isobar?
- What is a trough? What is a ridge?

Forces on the Air

- What is the definition of pressure gradient?
- What is the pressure gradient force? In what direction does it push?
- What is the Coriolis force?
- What is a Foucault pendulum?
- Near what latitudes is the sideways push of the Coriolis force small? Near what latitudes is it large?
- Does the Coriolis force push toward the right or left in the Northern Hemisphere?

Wind Relative to Forces

- What is the wind direction relative to the location of high and low pressure?
- What is the direction of flow around a low in the Northern Hemisphere? Around a high?
- If isobars are close, what will the wind speed be?
- What does friction do to the wind speed?
- What does friction do to the wind direction? Why?
- What are convergence and divergence?
- Do you expect convergence into or divergence out of a low at the surface? Rising or sinking air above a surface low?
- For a surface high, convergence or divergence? Rising or sinking air above it?