

Air Pressure and the Falling Glass

Name: _____

Date: _____

Class: _____

Read the lesson at myweatherrock.com/journal/explainers/air-pressure-falling-glass (or the printed copy), then answer below.

Remember

A barometer weighs the column of air above you. One reading by itself says almost nothing; the change over time, the tendency, is where the forecast lives. The Weather Service tracks pressure tendency as the change over three hours: steadily falling means a low or a front is approaching, the steeper the fall the stronger or closer the system, and the sharp turn from fall to rise usually arrives with the front itself. Every reading on a weather map is first corrected to sea level, because raw station pressure mostly measures your altitude.

Questions

1. Why is one barometer reading, by itself, nearly useless?

- ☐ A. Barometers are inaccurate instruments
- ☐ B. The forecast lives in the change over time, not the value
- ☐ C. Pressure only matters at sea

2. The pressure has been falling for six hours and the fall is steepening. The most likely story is:

- ☐ A. A high is building overhead
- ☐ B. A low or front is approaching and closing in
- ☐ C. The barometer needs new batteries

3. During a cold front passage, the pressure minimum typically arrives:

- ☐ A. Hours after the front has cleared
- ☐ B. At or just ahead of the frontal passage
- ☐ C. At random; pressure and fronts are unrelated

4. Why must station pressure be corrected to sea level before it goes on a map?

- ☐ A. Because sea level is where the weather happens
- ☐ B. Because raw readings mostly measure elevation, not weather
- ☐ C. Because inches and millibars disagree

5. The old sailors' rhyme says: long foretold, long last; short notice, soon past. In tendency terms it means:

- ☐ A. Slow falls mean big lingering systems, sudden dives mean violent brief ones
- ☐ B. Any fall means a long storm
- ☐ C. Forecasts made early are more accurate

In your own words

Your pressure reading falls steadily for three hours. Explain what is probably coming and why a falling number means that.

Answer key (for the teacher)

1. Why is one barometer reading, by itself, nearly useless?

B. The forecast lives in the change over time, not the value — The same reading can sit inside a fall or a rise, and those are opposite forecasts. Tendency, the three hour change, is the observation that speaks.

2. The pressure has been falling for six hours and the fall is steepening. The most likely story is:

B. A low or front is approaching and closing in — A deepening slide is the classic pre-frontal trace: air is leaving the column above you as the lighter system nears, and the steepness tracks its strength and approach.

3. During a cold front passage, the pressure minimum typically arrives:

B. At or just ahead of the frontal passage — The trace bottoms out as the front passes and then rises sharply behind it as the dense cold air mass moves in. The turn IS the passage, drawn in ink.

4. Why must station pressure be corrected to sea level before it goes on a map?

B. Because raw readings mostly measure elevation, not weather — Pressure drops roughly an inch of mercury per thousand feet of altitude. Without reduction to sea level, a map would show mountains as permanent monster storms.

5. The old sailors' rhyme says: long foretold, long last; short notice, soon past. In tendency terms it means:

A. Slow falls mean big lingering systems, sudden dives mean violent brief ones — A patient multi-day fall announces a large slow system; a sharp dive announces something intense and quick. It is a rule about the SHAPE of the trace, and it still holds up.