

# ATM205 Introduction to Atmospheric Sciences Fall 2014

## Homework No. 14 (optional) Due Friday 12/12/14

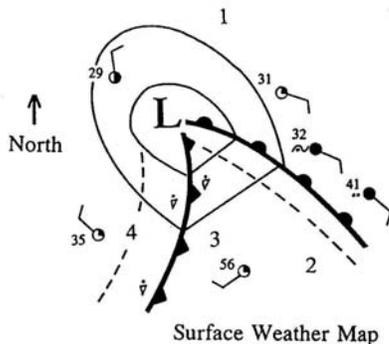
**Note: This home work set is optional. If you hand it in, you will earn extra credit points. You must hand it in to me by email by midnight on Friday 12/12 to get credit. You can earn up to 12 extra credit points on this homework.**

Name: \_\_\_\_\_ ID: \_\_\_\_\_

### Multiple Choice Questions (12 pts, 1 pt for each question)

1. The least accurate forecast method of predicting the weather two days into the future during changeable weather conditions is usually the:  
a. trend method      b. persistence forecast      c. analogue method  
d. prediction by weather types      e. numerical weather prediction
2. An accurate forecast:  
a. always shows skill      b. may or may not show skill  
c. never shows skill      d. requires complex computer equipment
3. Warm advection is most likely to occur:  
a. in the center of a cut-off low      b. behind a cold front  
c. from the surface up to the 500 hPa level ahead of an advancing warm front  
d. on the western side of a shortwave trough at the 500 hPa level

Questions 4-6 refer to the following illustration of a middle latitude cyclone (the dashed lines show the positions of the fronts 6 hours ago).



4. The storm system will apparently move toward the:  
a. northeast      b. east      c. southeast      d. northwest
5. At which of the 4 positions would you expect to hear the following 12-hour forecast: "Cloudy and cold this morning with snow this afternoon and tonight"?  
a. 1      b. 2      c. 3      d. 4
6. At which of the 4 positions would you expect to hear the following 12-hour forecast: "Clearing and colder today with continued rising pressure"?  
a. 1      b. 2      c. 3      d. 4

7. The forecasting technique that produces several versions of a forecast model, each beginning with slightly different weather information to reflect errors in the measurements, is called:
  - a. climatology forecasting
  - b. redundancy analysis
  - c. persistence forecasting
  - d. ensemble forecasting
  - e. probability forecasting
8. A forecast of an extended period of dry weather would be made for a region beneath:
  - a. an upper-level trough
  - b. the polar jet stream
  - c. a cold pool of air aloft
  - d. an upper-level ridge
  - e. a shortwave trough
9. An analysis is:
  - a. a forecast chart that shows the atmosphere at some future time
  - b. a forecast chart that compares past weather maps with those of the present
  - c. a surface or upper-level chart that interprets the present weather patterns
  - d. a forecast method used in long range weather prediction
  - e. a method used to determine skill in predicting the weather
10. Suppose it is warm and raining, and a cold front is moving toward your location. Directly behind the cold front it is cold and snowing. Still further behind the front the weather is cold and clearing. If the front is scheduled to pass your area in 6 hours, a persistence forecast for your area for 12 hours from now would be:
  - a. cold and snowing
  - b. cold and clearing
  - c. cold and cloudy
  - d. warm and raining
  - e. not enough information on which to base a forecast
11. Suppose that where you live, the middle of January is typically several degrees warmer than the rest of the month. If you forecast this "January thaw" for the middle of next January, you would have made a
  - a. forecast based on the analogue method.
  - b. persistence forecast.
  - c. forecast based on weather types.
  - d. probability forecast.
  - e. climatological forecast.
12. The forecasting of weather by a computer is known as
  - a. weather type forecasting.
  - b. climatology forecasting.
  - c. extended weather forecasting.
  - d. analogue prediction.
  - e. numerical weather prediction.

Note: Since this homework is already for extra credit, no further extra credit points can be earned by handing in questions for review from Ahrens.