

**NAME:** \_\_\_\_\_

**Atmospheric Sciences 101 Summer 2004  
Homework #8 (Due Tuesday, 16 August 2005)**

**1. Frontal structure and profiles.**

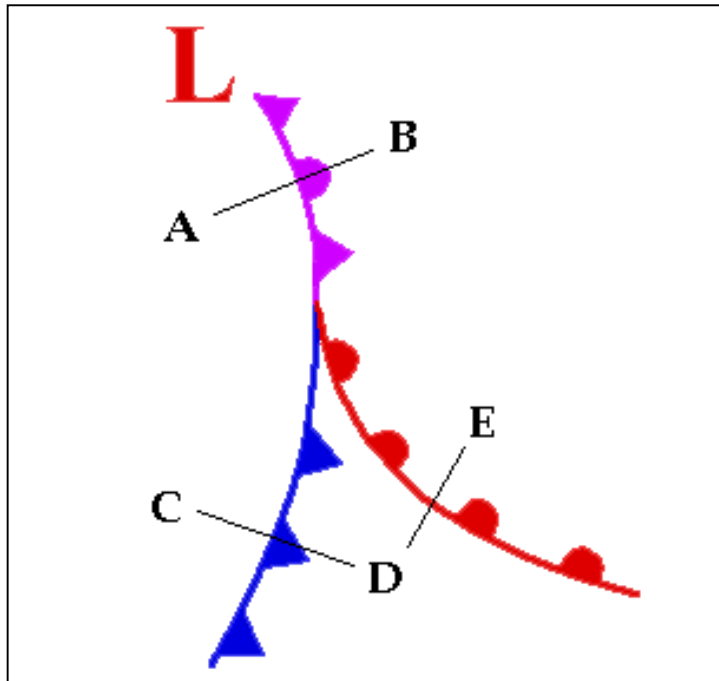
A. On the figure below, what structures do the following represent?

i. The structure intersected by the LINE A – B: \_\_\_\_\_ [1]

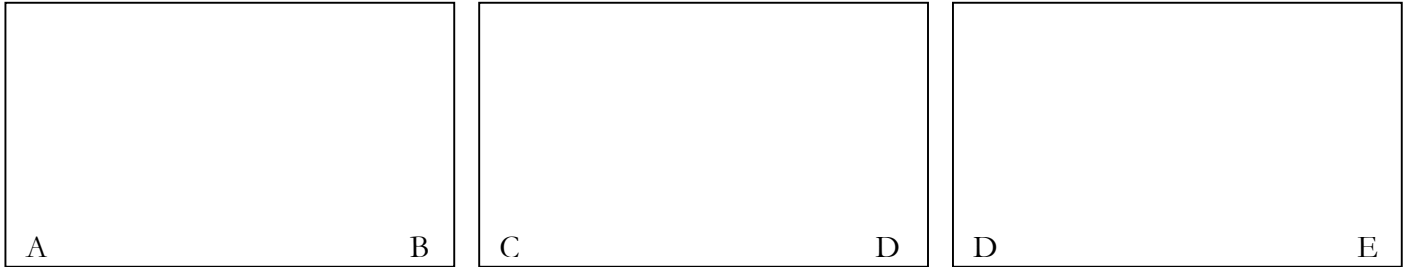
ii. The structure intersected by the LINE C – D: \_\_\_\_\_ [1]

iii. The structure intersected by the LINE D – E: \_\_\_\_\_ [1]

B. On the figure below, indicate the relative temperatures and appropriate air mass designations in the three regions. [3]



C. In the spaces provided, diagram the vertical profiles of the three structures indicated in the figure on preceding page. Indicate the relative temperatures of the air masses in each of the figures. Be sure to accurately represent the shape of the fronts in the vertical. There is more than one correct answer for this question, but the temperatures must correspond to those given in 1B. [3]



2. The following diagram shows a map of 500mb heights. On the map below, include the following features:

- i. The trough axis. [1]
- ii. The best location for the development or intensification of a surface mid-latitude cyclone (indicate on the map with **L<sub>D</sub>**). [1]
- iii. The location of the surface low-pressure center in a mature or dissipating mid-latitude cyclone (indicate on the map with **L<sub>M</sub>**). [1]
- iv. The approximate direction of the wind between the 5520m and 5580m isoheights at the “four corners” (intersection of Utah, Colorado, New Mexico and Arizona borders). [1]

