Fill in the Blank

1. For a surface midlatitude cyclone to develop or intensify into a deep low pressure area, aloft ______ must be greater than surface convergence of air.

2. ______ instability is needed for a surface low pressure area to intensify into a huge storm.

3. The region of strongest winds in the core of the jet stream is called a ______.

4. When a surface anticyclone is building or strengthening, aloft ______ must be greater than surface divergence of air.

5. As the ______ ______ bends into a looping wave pattern, it provides some of the necessary ingredients for a developing surface storm system.

6. For a surface midlatitude cyclone to develop or intensify, the upper level low must be to the ______ of the surface low.

Multiple Choice

1. When an upper-level low lies directly above a midlatitude storm system, the surface low will usually:
   a. dissipate
   b. intensify
   c. show no change during a 48 hour period

2. The polar front theory was developed:
   a. shortly after the end of World War II
   b. just before the turn of the 19th century
   c. shortly after the end of the Korean War
   d. shortly after the end of World War I

3. If an upper-level trough is located to the west of a surface midlatitude storm, the surface storm will probably move toward the:
   a. southwest
   b. northeast
   c. northwest

4. One would expect diverging air aloft and converging surface air to be on the ______ side of a vorticity maximum.
   a. eastern
   b. western