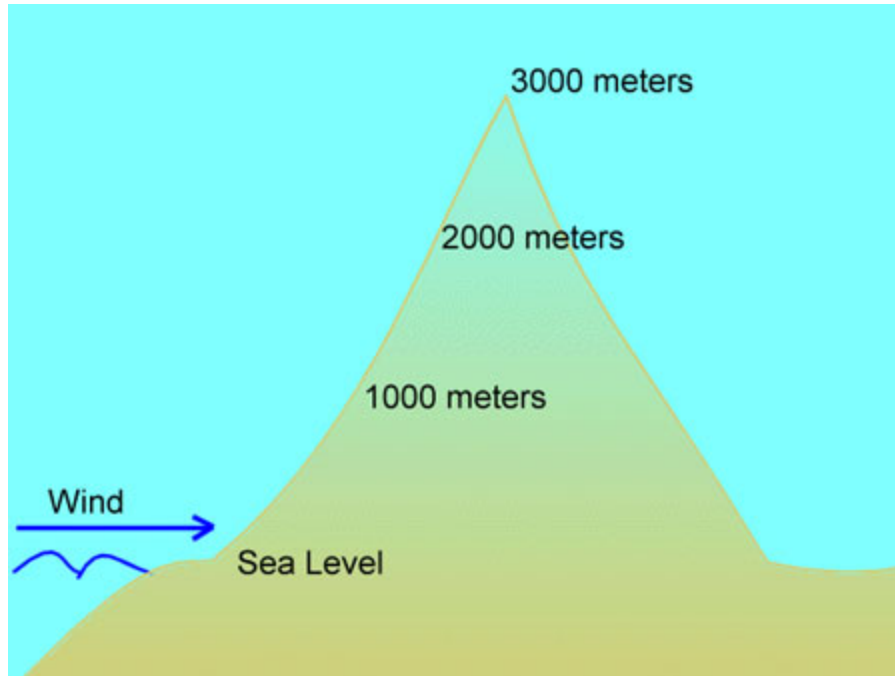


Questions

Use the diagram of the mountain below to answer the following questions. Assume that:

- the temperature at sea level is 30 degrees C,
- the normal lapse rate is 6.5 degrees C/km,
- the dry adiabatic lapse rate is 10 degrees C/km,
- the saturated adiabatic lapse rate is 5 degrees C/km, and
- the dew point is 10 degrees C.

All of your answers should be in either meters or degrees C. Remember that 1 km = 1000 m.



1. What will the temperature be of still air at 1000 meters altitude?
2. At what altitude will the temperature of still air be 10.5 degrees C?
3. If a wind blows onshore and rises up the slope of the mountain, what will the temperature be of the rising air at 1000 meters altitude?
4. At what altitude will the temperature of the rising air be 10 degrees C?
5. What will the temperature be of the rising air at 3000 meters altitude?
6. At what altitude is the lifting condensation level?
7. After reaching the summit of the mountain, the air moves downslope on the leeward side. Assuming that the air is unsaturated and that no evaporation is taking place. what will the temperature be of the subsiding air at 2000 meters