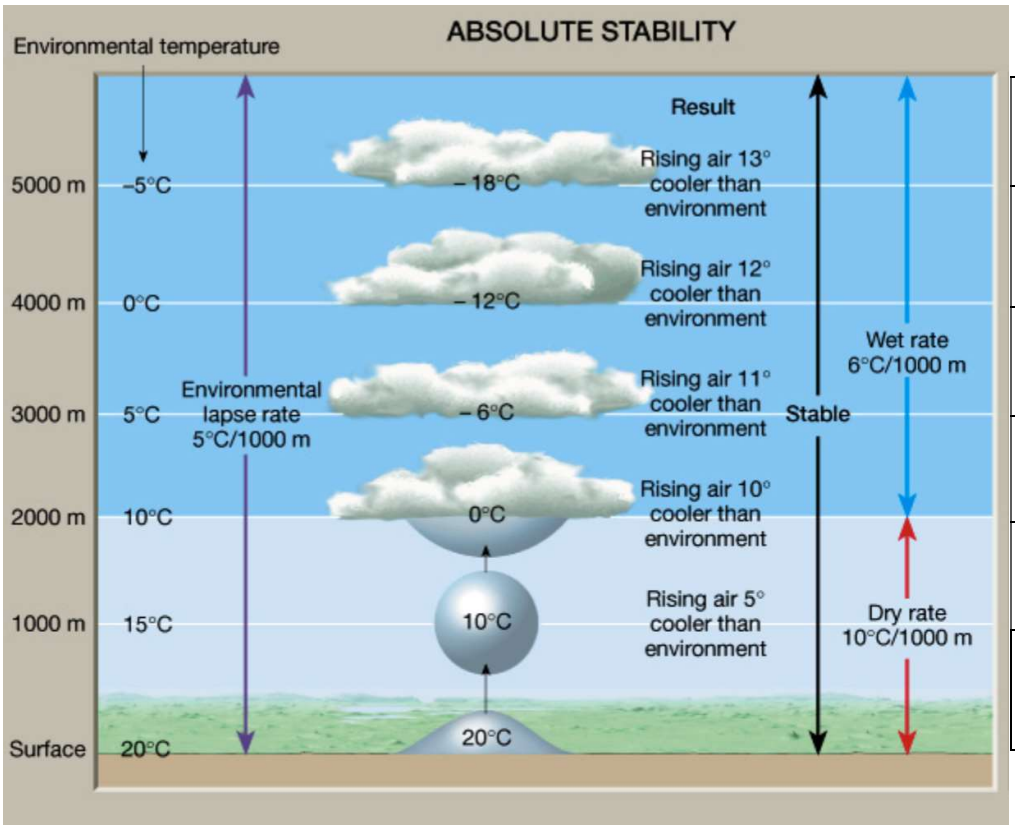
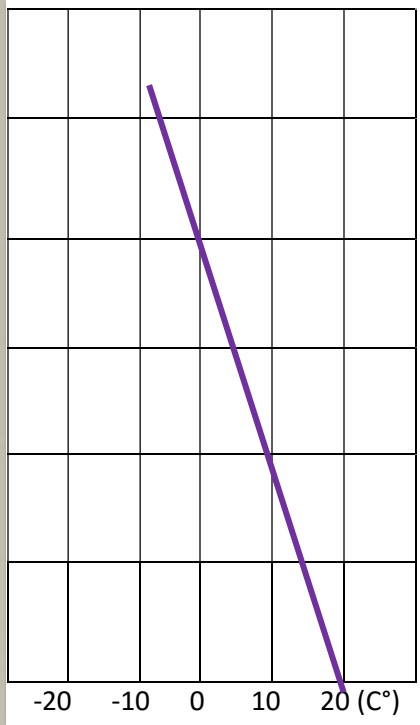
Atmospheric Stability

Name:_____

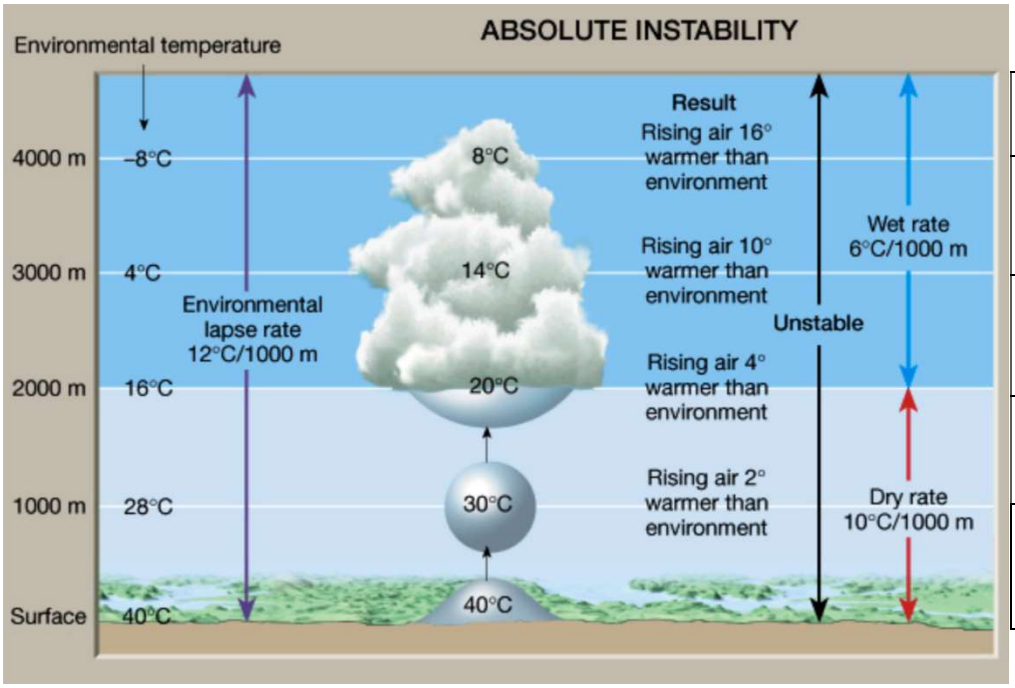
Please use three different colors to represent the following: *Environmental Lapse Rate*, *Dry Rate*, *and Wet Rate*. Transfer their temperature and how high they are on the line graph to the right, then answer the question after each graph.



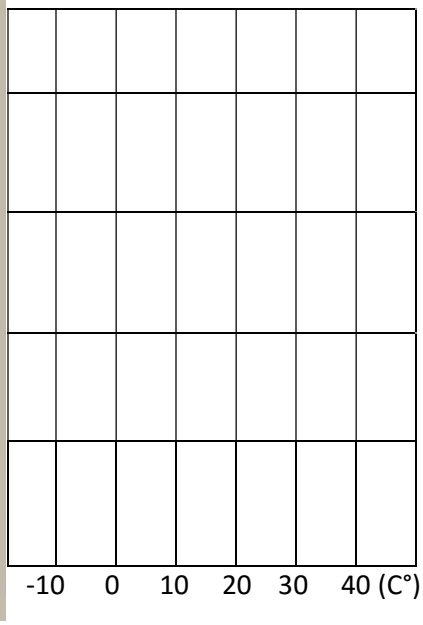
Graph the WAR and DAR lines



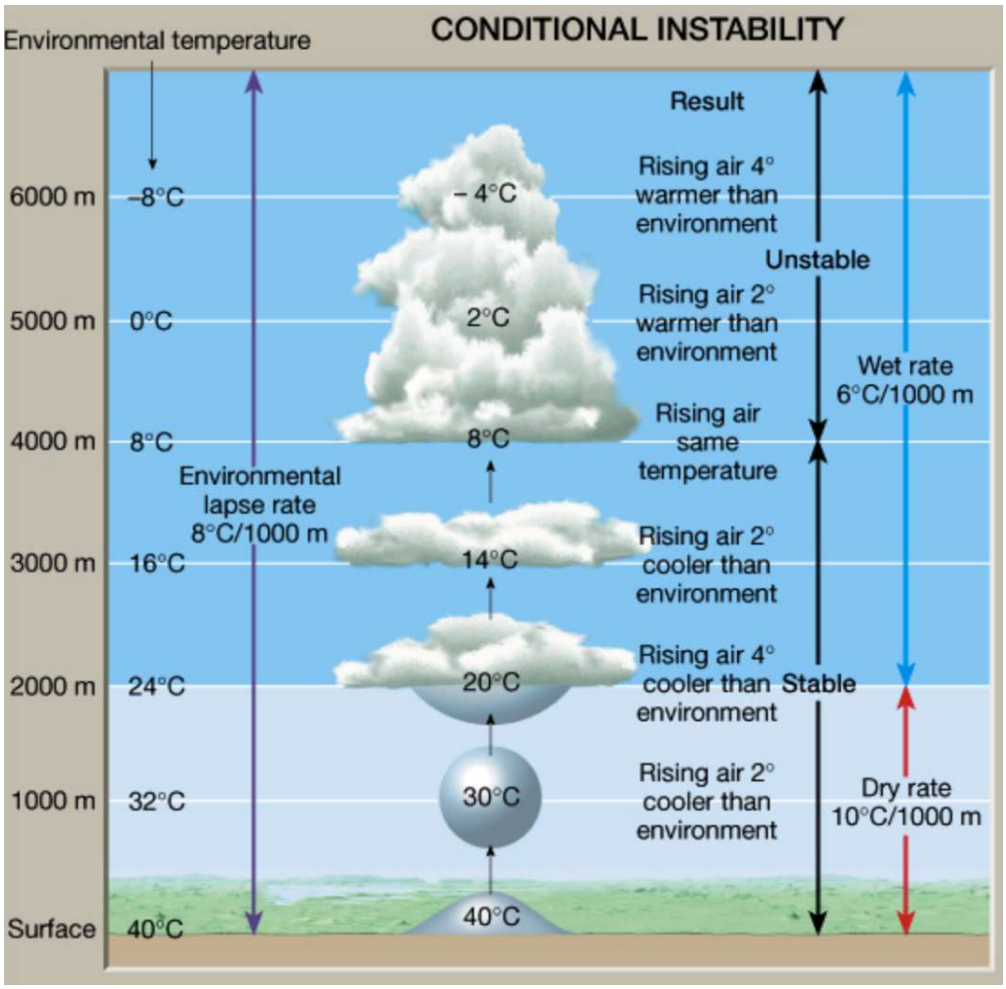
How does Wet (WAR) and Dry Adiabatic Rate (DAR) lines compare to the Environmental Lapse Rate (ELR) line?



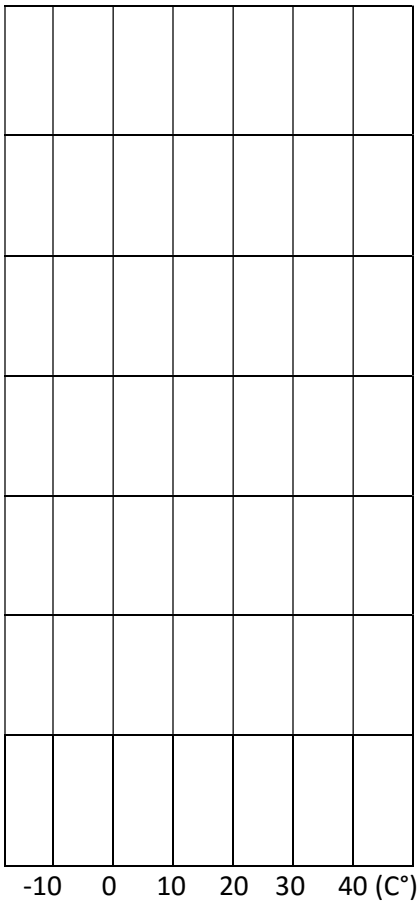
Graph the WAR, DAR, ELR lines



From interpreting these two graphs and diagrams, what causes atmospheric instability?



Graph the WAR, DAR, ELR lines



This is the most common scenario in life, what makes this atmospheric stability change compared to the first two?

Suppose the base of a cumulus cloud has formed at 2000 meters above sea level. The temperature at sea level is currently 32°C. What is the temperature of the top of the cloud at 3500 meters? (Hint: refer to the dry and wet adiabatic rates to help easily calculate the temp.)