**The Challenges**

1. Plot the heads (or WTD) of the initial steady state condition. The gradient is not uniform for the initial steady state conditions - discuss the influences of recharge and the unconfined condition on this nonlinearity
2. Determine if the system has reached steady state afert 10 years - consider a point at the well and another at the center of the domain.
3. Repeat your run this time for 100 years and reconsider question 2 again.
4. Find the zone of influence of the well defined in two ways:
   * Based on the drawdown from the initial steady state to the end of simulation time (end of final no-pumping stress period).
   * Based on the drawdown from the end of the last pump-on stress period to the end of simulation time.
5. Find a constant pumping rate (same throughout the year) that matches the head time series at the middle of the domain.
6. Find a constant pumping rate (same throughout the year) that matches the head time series at the well, leaving only a regular, repeating seasonal residual. Are the two pumping rates the same?

**Glossary questions:**

1. Explain the concept of stress periods in MODFLOW. How should you determine stress periods when setting up your model? How do they differ from timesteps?
2. What is the period length in MODFLOW? How does the meaning of the period length differ for a steady state vs non steady state solution?
3. What does the nstep variable signify in MODFLOW and how does it relate to the stress periods and period lengths? List the pros and cons of taking large timesteps vs. small timesteps. Is there any limit to how large a time step you can take and if so what determines this limit?