

**Review for Lab Exam 3:** This Exam will cover Dating & Geologic Time (Ch 13), Geologic Structures (Ch 14 & 15) and Groundwater lab (Ch 9).

**Dating and Geologic Time (Ch 13):**

- You should be able to determine the relative timing of geologic events (including deposition of sedimentary rocks, igneous intrusions, folding, faulting and erosion).
- Know the 3 types of unconformities that we learned about in lab and lecture.
- Know what a half-life is, how to calculate the daughter/parent ratio, and how to read a graph showing the number of half lives that have elapsed (Figure 13.11 on p. 256). You should also be able to calculate the age of a rock when given the daughter/parent ratio, the half life and the above mentioned graph.

**Groundwater (Ch 9)**

- Know how to determine the elevation of the water table.
- Be able to determine the direction of groundwater flow using a topographic map (similar to p. 177) or using a contour map of the water table (similar to p. 181).
- Know how to calculate the slope of the water table (a.k.a. the hydraulic gradient).
- Be able to calculate how long it will take groundwater to flow a certain distance using the equation  $T = \frac{D}{V}$

**Geologic Structures (Ch 14 & 15)**

- Folds and faults are types of geologic structures. Know the difference between plunging/nonplunging anticlines and synclines.
- Be able to complete diagrams similar to Figure 14.12 (p. 271) and Figure 14.13 a and b only (p. 272).
- Understand and be able to apply the concept you learned in Part II of the Structure Lab. Part II included problem 5 in your lab manual and the very last problem of the lab (the free-hand sketch you made of the syncline).
- Be able to identify normal and reverse faults and hanging wall vs. footwall.