12th Grade Assignment – Week #8

Group Assignments:

For Tuesday

- Do the following problems in the given order. See how far you can get!
  - Do ***Discovery Sheet #7***, problem #5. Only spend a maximum of 8 minutes on this.
  - Get as far as you can with the problems on ***Discovery Sheet #8***, problems #1-8.

For Thursday

- Do the following problems in the given order. See how far you can get!
  - Do ***Discovery Sheet #8***, problems #9-11.
  - Do ***Discovery Sheet #9***, problem #1.

At some point, if you would like a challenge!

- Prove the summation formulas. (I will give two different proofs in an extra lecture next week.)

$$\sum_{i=1}^{n} i = \tfrac{1}{2} n^2 + \tfrac{1}{2} n$$

$$\sum_{i=1}^{n} i^2 = \tfrac{1}{3} n^3 + \tfrac{1}{2} n^2 + \tfrac{1}{6} n$$

$$\sum_{i=1}^{n} i^3 = \tfrac{1}{4} n^4 + \tfrac{1}{2} n^3 + \tfrac{1}{4} n^2 = \left(\sum_{i=1}^{n} i\right)^2$$

Individual Work

- As much as you can, complete any of the group assignment that your group didn't finish.
- Create a "summary page" for the week.
- If you have the time and desire, watch the "extra lecture" for the week (W08 – L3), where I give proofs of the *Derivative Rules.*