1. Squeeze Theorem – Find the limit of the sequence $a_n = \frac{\cos n}{n^2+1}$

2. Super Computing Geek-out – Some friends and I were having a debate on whether classical computing could be used to appropriately map rare genome-to-phenome associations (GWAS). The number of entries that must be processed in GWAS is made up of a matrix of the square of the number of individuals in a population added to a matrix of the number of individuals multiplied by the number of known base pair differences ($g_n = n^2 + Mn$). Moore's Law states that computing power will double every two years ($c_n = K2^n$). For a large dataset and computer far in the future ($\lim_{n\to\infty}$), will computing power or the number of records dominate?

Geometric Series – Evaluate each geometric series or state that it diverges

3. $\sum_{k=0}^{\infty} \left(\frac{1}{4}\right)^k$

4. $\sum_{k=1}^{\infty} \frac{1}{k(k+1)}$

Review – Solve the following problems

5. Find $\int \frac{x^2-x}{(x-2)(x-3)^2}\,dx$

6. Evaluate $\int_0^\infty e^{-3x}dx$

7. Solve for y such that $y'(t) = 2.5y$, and $y(0) = 3.2$

8. Find the limit of $\left\{a_n = \frac{4n^3}{n^3+1}\right\}_{n=1}^{\infty}$