§2.4 # WrittenHW #5 TCSS 321

1. [2] Given that $a_n = 7 + 4^n$, find a_0 and a_1.
2. A man became employed in 2009 with a starting pay of \$50,000. Every year he receives a raise of \$1,000 plus 5% of the salary from the previous year.
   (a) [2] Find a recurrence relation for the salary of this man n years after 2009.
   (b) [3] Find an explicit formula for the salary of the man n years after 2009.
3. [3] Compute $\sum_{i=1}^{3}\sum_{j=1}^{2}(i-j)$

§2.6 # WrittenHW #5 TCSS 321

1. [3] Find a matrix A such that: $\begin{bmatrix} 2 & 3 \\ 1 & 4 \end{bmatrix} A = \begin{bmatrix} 3 & 0 \\ 1 & 2 \end{bmatrix}$
2. [3] If A and B are both $m \times n$ matrices, prove that $A + B = B + A$.
3. [1] A $n \times n$ matrix is upper triangular if $x_{ij} = 0$ whenever $i > j$. Create an example of an upper triangular matrix.
4. [3] Construct an algorithm that takes two upper triangular matrices and computes their product more efficiently than the generic definition of matrix multiplication. Give a big O estimate for the number of multiplications (between real numbers) that your algorithm uses.