## **Computer Science I – Spring 2012** Lab: Recurrence Relations

Solve the following recurrence relations using the iteration technique shown in class:

1) T(n) = T(n-1) + 7, T(1) = 4\_\_\_\_\_

T(n) = T(n-1) + 7T(1) = 4

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Substituting Equations

2) 
$$T(n) = 2T\left(\frac{n}{2}\right) + 2, T(1) = 2$$

T(n) = 2T(n/2) + 2T(1) = 2  $\frac{Substituting Equations}{\underline{n \rightarrow n/2}}$ 

## Here's one more that the TA will work out for you:

3)  $T(n) = T\left(\frac{n}{2}\right) + n$ , T(1) = 1, Hint:  $\sum_{i=0}^{\infty} \frac{n}{2^i} = 2n$  (Just get an approximate solution here.)