

Quiz 4: Recurrence Relations

CS 14 - Data Structures

April 9, 2013

Solve the following relations. Express your final answers in Θ notation.

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

2. $T(n) = T\left(\frac{n}{4}\right) + 1; T(1) = 1$

3. $T(n) = 2T\left(\frac{n}{2}\right) + 1; T(1) = 1$

4. $T(n) = T(n-1) + n; T(1) = 1$

5. $T(n) = 4T\left(\frac{n}{4}\right) + n; T(1) = 1$

6. $T(n) = \frac{n}{2}T\left(\frac{n}{2}\right) + 1; T(1) = 1$

7. $T(n) = 2T(n-1) + 1; T(1) = 1$