Quiz 3

1. Solve the following recurrence relation: $T(n) = T(n-1) + 2$ when $n \geq 1$, and $T(0) = 5$.

2. How many poker hands (5 cards from a deck of 52) are ***three of a kind***? Three of a kind means three cards of one value (a *value* being one of 2,3,4,5,6,7,8,9,0,J,Q,K,A), a fourth card of a second value, and a fifth card of a third value. Let's do it in stages.

   (a) How many different possibilities are there for the value of the card that you'll have three of?

   (b) Having chosen that value, how many different ways are there to get three of them?

   (c) Having chosen those first three cards, how many different possible values are there for the remaining two cards?

   (d) Having chosen the values for the remaining two cards, how many ways are there to pick these two cards?

   (e) Conclude: how many poker hands are three-of-a-kind?