MATH 172 Fall, 2009 Quiz #2 Name:_____

1. Give the updating equation (also known as the recurrence equation) for the length $\ell(n)$ of a chain of n grocery buggies, where each buggy is 4 feet long, and when you push a new buggy into the chain, only 6 inches sticks out. Note that the pattern doesn't really begin until you actually have one buggy, so $\ell(0)$ is not defined, $\ell(1) = 4$, $\ell(2) =$ _____, $\ell(3) =$ _____. Then find an explicit formula for $\ell(n)$ in terms of n. Suggestion: make a table with a column for n and a column for $\ell(n)$.

2. If $P(n) = n^2 - 3n$, compute ΔP.