

Seatwork (Counting Principles)

Show your solutions

1. If a procedure can be broken down into n tasks, where each task i can be performed t_i ways. Prove via induction that the procedure P_n can be performed $t_1 t_2 \cdots t_n$ ways.
2. How many 4-element DNA sequences
 - a) do not contain the base T?
 - b) contain all four bases A, T, C, and G?
 - c) contain exactly three of the four bases A, T, C, and G?
3. A palindrome is a string whose reversal is identical to the string. How many bit strings of length n are palindromes?

