

1. Use §6.3#4ab to show directly (without induction) that

$$\sum_{k=1}^n (2k - 1) = n^2 \text{ (use §6.1#1)}$$

2. Use §6.3#11c to show directly (without induction) that

$$\sum_{k=0}^n \binom{n}{k} = 2^n \text{ (This is §6.3#11d)}$$

3. Let the sequence a_0, a_1, \dots be defined by $a_0 = 1, a_{n+1} = 2a_n + 1$. Find a formula for a_n .

4. Prove: §6.3#4a

5. Prove: §6.3#4b

6. Prove: $n^5 - n$ is divisible by 5 for all $n \geq 1$.

Board/Claim Proofs

§6.3#2	§6.3#5b	§6.3#7a	§6.3#7b	§6.3#7c