

Last name _____

First name _____

LARSON—MATH 550—CLASSROOM WORKSHEET 10
Perturbation method.

Concepts & Notation

- Sec. 2.2. Two “tricks”.
- Sec. 2.3. Rules for sums. Perturbation method.
- Sec. 2.4. Multiple sums.

Homework

1. Find a formula for the *geometric series*

$$S_n = \sum_{k=0}^n ax^k.$$

2. Use the perturbation method to find a formula for the

$$S_n = \sum_{k=0}^n k2^k.$$

3. Find $(a_1 + a_2 + a_3)(b_1 + b_2 + b_3)$

4. What does $\sum_{1 \leq i, j \leq 3} a_i b_j$ mean.

5. Find a nice expression for $\sum_{1 \leq i, j \leq 3} a_i b_j$ by rewriting as a double-sum.