

Your Name: _____

Your Partner: _____

Quiz 2

Math 253

You have 20 minutes to complete this quiz. When you're finished, first check your work if there is time remaining, then turn it in. You may use a scientific calculator, but not a graphing one, and not any internet-connected device. You may work with one other student. **Show all your work.**

1. (12 points) Consider the series

$$\sum_{n=1}^{\infty} (n^2 - (n+1)^2).$$

a) (8 points) Find a formula for S_k , the k th partial sum. Your answer must be in closed form (i.e. not contain "...").

b) (4 points) Does the series converge or diverge? If it converges, find its value.

2. (8 points) Find the value of the series

$$\sum_{n=1}^{\infty} \frac{2^n + 3^n}{4^n}$$

or show it diverges.