

Name: \_\_\_\_\_ Score: \_\_\_\_\_

1. Compute the sum and the limit of the sum as  $n \rightarrow \infty$ .

$$\sum_{i=1}^n \frac{1}{n} \left[ \left( \frac{i}{n} \right)^2 + 2 \left( \frac{i}{n} \right) \right]$$

You may use the following equalities:

$$\sum_{i=1}^n i = \frac{n(n+1)}{2}, \quad \sum_{i=1}^n i^2 = \frac{n(n+1)(2n+1)}{6}$$

— Good luck! —