Present neatly ~~on separate paper~~. Justify for full credit. No Calculators.

Name _____   Score _____ A (10 minutes)

1) (8 points)

Use the limit definition to find the precise area enclosed by the graph of $f(x) = x^2 + x$ and the horizontal axis on the interval [1, 4].

2) (2 points)

Write the given limit as a definite integral. Explain your reasoning.

$$\lim_{n \to \infty} \frac{1}{n} \sum_{i=1}^{n} \frac{1}{1 + (i/n)^2}$$

Present neatly ~~on separate paper~~. Justify for full credit. No Calculators.

Name _____   Score _____ F (8 minutes)

1) (8 points)

Use the limit definition to find the precise area enclosed by the graph of $f(x) = 10 - x^2$ and the horizontal axis on the interval $[1, 3]$.

2) (2 points)

Write the given limit as a definite integral. Explain your reasoning.

$$\lim_{n \to \infty} \sum_{i=1}^{n} \frac{i^4}{n^5}$$