Name: ________________________________

Signature: ________________________________

Show all work clearly and in order, and box your final answers. Justify your answers whenever possible. You have 20 minutes to take this 10 point quiz.

1. 10 points Given that

\[ \int_0^3 x^3 - 6x \, dx = \lim_{n \to \infty} \frac{3}{n} \sum_{i=1}^{n} \left[ \left( \frac{3i}{n} \right)^3 - 6 \left( \frac{3i}{n} \right) \right], \]

evaluate both the left and right side of this equation to show that they both equal the same number.