MATH 136 Calculus 2 **Quiz 1** **September 15, 2023**

Your Name:

Duration of the Quiz is 20 minutes. There are two problems, worth 20 points. Show all your work for full credit. Books, notes etc. are prohibited. Calculators are NOT permitted.

1. Let A be the area under the graph of $f(x) = 2x^2 - 3x + 2$ over $[2, 5]$. Compute A as the limit $\lim_{n\to\infty} R_n$.

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

2. Draw a graph of the signed area represented by the integral and compute it using geometry.

(a) $\int_{-1}^{3} 2x - 4\,dx$

(c) $\int_{-3}^{2} (|x| - 2)\,dx$

(b) $\int_{-3}^{1} 2\,dx$

(d) $\int_{0}^{3} \sqrt{9 - x^2}\,dx$