Math 102 - Quiz#1

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Name:

ID No.: Serial No.:

1. **Find** an estimate of the area under the graph of $y = \frac{1}{x}$ from $x = 2$ to $x = 6$ using four approximating rectangles and right endpoints.

2. **Find** the value of $\lim_{n\to\infty} \sum_{i=1}^{n} \left(\frac{4i}{n^2} + \frac{3}{n} \right)$.

3. **Find** the $\int_0^8 f(x)\,dx$ where $f(x) = \begin{cases} |x-1| & \text{if } 0 \le x \le 2 \\ \sqrt{9-(x-5)^2} & \text{if } 2 < x \le 8 \end{cases}$.

4. **Find** $F(4) + F'(4)$ if $F(x) = \int_{\sqrt{x}}^{2} \cos(\pi t^2)\ dt.$ $\left(F'(4) = \frac{dF}{dx}\Big|_{x=4} \right)$