

This quiz is worth 20 points and you have 20 minutes to complete it. Show all work and circle your final answers.

Calculators are NOT allowed today.

1. (10 pts) Calculate $\int_2^5 x^2$ using a limit of Riemann sums.

*Hints: You may **not** use the formula $\frac{1}{3}(b^3 - a^3)$. You will have to write down the general Right Hand Sum, express this sum as a formula in terms of N (using the sum formulas at the bottom of the page), and then take the limit as $N \rightarrow \infty$.*

Sum formulas you can use:

$$\sum_{k=1}^N 1 = N, \quad \sum_{k=1}^N k = \frac{N(N+1)}{2}, \quad \sum_{k=1}^N k^2 = \frac{N(N+1)(2N+1)}{6}, \quad \sum_{k=1}^N k^3 = \frac{N^2(N+1)^2}{4}.$$

TURN OVER FOR MORE →

2. (10 pts) Find $\lim_{x \rightarrow 0^+} (\sin x)^x$. Show all work clearly and in order.