

Quiz 10: L'Hôpital's Rule (§4.7) and Riemann Sums (§5.1)

Directions: You have 30 minutes to complete this quiz. Collaborative and open book.

1. $\lim_{x \rightarrow 2\pi} \frac{x \sin x + x^2 - 4\pi^2}{x - 2\pi}$

2. $\lim_{x \rightarrow \pi/2} \frac{2 \tan x}{\sec^2 x}$

3. $\lim_{x \rightarrow 0^+} (\sin x) \sqrt{\frac{1-x}{x}}$

4. $\lim_{x \rightarrow \infty} (x - \sqrt{x^2 + 1})$

5. $\lim_{x \rightarrow 0} (1 + 4x)^{\frac{3}{x}}$

6. Write down the left, right, and midpoint Riemann sums approximating the area under the curve

$$f(x) = \frac{1}{x} \quad \text{on the interval} \quad [1, 6]$$

using four rectangles. Your answers should be in Σ -notation. You don't have to compute the sums.