1. L'Hôpital's Rule says that if \( \lim_{x \to c} u(x) = 0 \) and \( \lim_{x \to c} v(x) = 0 \), and \( u'(x) \) and \( v'(x) \) exist on an open interval around \( c \), then \( \lim_{x \to c} \frac{u(x)}{v(x)} = \lim_{x \to c} \frac{u'(x)}{v'(x)} \) (assuming this limit exists). Apply this rule to find \( \lim_{x \to 0} \frac{e^h - 1}{h} \).

2. Find the derivative of \( e^x \) using the definition of derivative. You will need to use the limit you found in #1.

3. Solve \( a^x = e^y \) for \( y \), and use properties of logs to write \( y \) as \( x \) times something (a constant). Explain why this tells you how to take the derivative of \( a^x \).

4. Graph \( f(x) = \sin(x) \). Use this graph to sketch the derivative of \( f'(x) \). What function does \( f'(x) \) appear to be?

5. Given the derivatives of \( \sin(x) \) and \( \cos(x) \), use the quotient rule to find the derivatives of \( \sec(x) \) and \( \csc(x) \).