

3. [5 points] Let

$$B(k) = e^{-4k^2} \tan(k + 3).$$

Use the limit definition of the derivative to write an explicit expression for  $B'(5)$ . *Your answer should not involve the letter  $B$ . Do not attempt to evaluate or simplify the limit.* Please write your final answer in the answer box provided below.

*Solution:*

$$B'(5) = \lim_{h \rightarrow 0} \frac{e^{-4(5+h)^2} \tan(h + 8) - e^{-100} \tan(8)}{h}.$$