

2. [5 points] Let

$$K(p) = (1 + \cos(p))^{1+2p}.$$

Use the limit definition of the derivative to write an explicit expression for  $K'(4)$ . *Your answer should not involve the letter  $K$ . Do not attempt to evaluate or simplify the limit. Please write your final answer in the answer box provided below.*

**Answer:**  $K'(4) =$   $\lim_{h \rightarrow 0} \frac{(1 + \cos(4 + h))^{1+2(4+h)} - (1 + \cos(4))^{1+2(4)}}{h}$