

9. [7 points] Let A and B be two constants and

$$h(x) = \begin{cases} 2Bx + A \ln(x) & 0 < x \leq 1 \\ \frac{4A}{x} + Bx - 1 & 1 < x \leq 2. \end{cases}$$

Find all the values of A and B that make the function $h(x)$ differentiable on the interval $0 < x < 2$. If no such values exist, write NONE. Justify your answer.

$A =$ _____ $B =$ _____