

3. [5 points] Let

$$K(u) = \arctan(u^2 + 3u).$$

Use the limit definition of the derivative to write an explicit expression for $K'(2)$. *Your answer should not involve the letter K . Do not attempt to evaluate or simplify the limit.* Write your final answer in the answer box provided below.

Answer: $K'(2) =$

4. [6 points] Suppose $b(x)$ is a differentiable function whose tangent line at the point $x = 4$ is given by the linear function $T(x)$. To the right is a table consisting of some values of $b(x)$ and $b'(x)$.

x	-3	-2	0	4
$b(x)$	5	1	-3	-6
$b'(x)$	-4	?	?	-1
$T(x)$				

a. [2 points] Find the values of $T(x)$ at $x = -3, -2, 0$, and 4 , and write them into the table.

b. [2 points] Use the table to estimate $b'(-1)$.

Answer: _____

c. [2 points] Find an equation for the line tangent to the graph of $y = b(x)$ at the point $(-3, 5)$.

Answer: $y =$ _____