1. [5 points] Let $h(x)$ be a differentiable function such that $h'(x)$ is also differentiable everywhere. Suppose that $h(3) = 9$, $h'(3) = 2$, and $h''(x) > 0$ for all real numbers x.

a. [2 points] Let $L(x)$ be the local linearization of $h(x)$ at $x = 3$. Find a formula for $L(x)$.

Answer: $L(x) =$ _____

b. [3 points] Which of the following equalities could be true?
Circle <u>all</u> the statements that <u>could</u> be true or circle NONE OF THESE.
You do not need to explain your reasoning.

$h(-1) = -1$

$h(-1) = 0$

$h(-1) = 1$

$h(-1) = 2$

NONE OF THESE