(2.) (9 points) Suppose you are given the following data about a differentiable function f:

- $f(3) = 7$
- $f'(3) = -4$.

(a) Find the local linearization of f near $x = 3$.

(b) Use linear approximation to estimate $f(3.1)$.

(c) If $f''(3) < 0$, do you expect your approximation to be an overestimate or underestimate for $f(3.1)$? Explain, *using a sketch* to support your answer. Include all relevant features of the function on your sketch–and express your answer in a sentence.