9. [8 points] Suppose g is a twice differentiable function with continuous second derivative. Several values of the first and second derivatives of g are shown in the table below.

t	-8	-6	-4	-2	0	2	4	6	8
$g'(t)$	-11	-10	-8	0	9	16	17	14	7
$g''(t)$	1	0	2	5	4	2	0	-2	-4

Assume that between each pair of consecutive values of t shown in the table, each of $g'(t)$ and $g''(t)$ is either always strictly decreasing or always strictly increasing.

a. [2 points] Use the local linearization of $g'(t)$ near $t = 6$ to estimate $g'(5.8)$.

Answer: $g'(5.8) \approx$ ________________________

b. [1 point] Indicate whether the local linearization of $g'(t)$ near $t = 6$ gives an overestimate or an underestimate of the value of $g'(5.8)$. If there is not enough information to make this determination, circle "not enough information". You do not need to explain.

Answer: This estimate is an (circle one):

overestimate   underestimate   not enough information

c. [5 points] Let f be the quadratic function defined by $f(t) = t^2 - 4t + 6$. and let R be the function defined by $R(t) = f(t) - g(t)$. At what, if any, values of t does $R'(t)$ (the derivative of $R(t)$) attain its global extrema in the open interval $-8 < t < 8$?
For each answer blank, write NONE if $R'(t)$ does not attain a global extremum of that type on the open interval $-8 < t < 8$, and write NOT ENOUGH INFO if the t value(s) cannot be determined exactly. Use calculus to find and justify your answers, and be sure to show enough evidence to demonstrate that you have found where the global extrema occur.

Answer: Global min(s) at $t =$ __________ and Global max(es) at $t =$ __________