

Question:

Values of a twice differentiable function, f , and its first and second derivatives are in the table below. Use this information to answer the following questions as well as you can.

x	$f(x)$	$f'(x)$	$f''(x)$
1	2	0	2
2	3	6	5
3	7	3	-4
4	2	5	7

- a) If $g(x) = (f(x))^2$, compute $g(2)$, $g'(2)$, and $g''(2)$.
- b) If $h(x) = f(x^2)$, compute $h(2)$, $h'(2)$, and $h''(2)$.
- c) If $k(x) = f(f(x))$, compute $k(2)$, $k'(2)$, and $k''(2)$.