AP Calculus AB
Dr. Paul L. Bailey

Homework 0428a
Tuesday, April 28, 2020

Problem 1. The functions f and g have continuous second derivatives. The table below gives values of the functions and their derivatives at selected values of x.

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	-6	3	2	8
2	2	-2	-3	0
3	8	7	6	2
6	4	5	3	-1

(a) Let $k(x) = f(g(x))$. Write an equation for the line tangent to the graph of k at $x = 3$.

Problem 1 (continued)**.** The functions f and g have continuous second derivatives. The table below gives values of the functions and their derivatives at selected values of x.

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	-6	3	2	8
2	2	-2	-3	0
3	8	7	6	2
6	4	5	3	-1

(b) Let $h(x) = \dfrac{g(x)}{f(x)}$. Find $h'(1)$.

(c) Evaluate $\displaystyle\int_1^3 f''(2x)\,dx$.