

Hand In Problems 4

Name _____

Instructions: Each short answer question is worth 10 points. You must show all Algebra and Calculus work. You may not skip any steps. Be sure to write all formulas that you use. Answer all word problems in complete sentences using units. You are on your honor to only use your notes, the textbook, and your graphing calculator but no outside resources.

1. Compute the derivatives using the values in the table below.

x	1	2	3	4	5
f(x)	1	3	4	2	5
f'(x)	3	5	2	1	4
g(x)	4	3	1	2	5
g'(x)	3	5	2	1	4

$$h(x) = x^2 f(x) + \frac{16x^5}{g(x)}, \text{ find } h'(3)$$

2. Use the table to answer the questions that follow.

x	$\frac{\pi}{2}$	$\frac{\pi}{3}$	$\frac{\pi}{4}$	$\frac{\pi}{6}$
$f(x)$	4	-2	3	5
$f'(x)$	10	4	-5	3
$g(x)$	2	6	2	4
$g'(x)$	4	5	6	7

If $h(x) = \sin(x) g(x) + \frac{g(x)}{\tan(x)}$, find $h' \left(\frac{\pi}{3} \right)$.