

Work the first problem in the space provided. Circle your answer. Find your answer among the choices. Put #2 in the problem blank. Work that question and proceed in this manner until finished. Make sure you **clearly communicate** in each cell **how** you are getting your answer.

The table below gives values of the differentiable functions  $f, g,$  and  $h$  and their derivatives  $f', g',$  and  $h'$  at selected values of  $x$ .

$x$	$f$	$f'$	$g$	$g'$	$h$	$h'$
0	3	-4	-5	$\frac{1}{2}$	4	$\pi$
1	4	-3	2	4	7	5
2	-2	$\pi$	17	7	-3	2
3	5	-1	$e$	2	1	$-\frac{3}{4}$
4	1	2	4	$\frac{3}{4}$	-5	1
5	3	8	6	7	4	-1

<p>Answer: <math>18 - 5e</math></p> <p>#1 _____ Let <math>k(x) = f(x) + g(x)</math>. Find <math>k'(2)</math>.</p>	<p>Answer: <math>4\pi</math></p> <p># _____ Evaluate <math>\int_0^4 [2 + f'(x)] dx</math>.</p>
<p>Answer: -3</p> <p># _____ If <math>g^{-1}</math> is the inverse function of <math>g</math>, what is the slope of the line tangent to the graph of <math>y = g^{-1}(x)</math> at <math>x = 2</math>?</p>	<p>Answer: <math>\frac{4 - 3\pi}{9}</math></p> <p># _____ Evaluate <math>r'(3)</math> where <math>r(x) = e^x g(x)</math>.</p>
<p>Answer: 38</p> <p># _____ Evaluate <math>\int_2^4 h'(x) dx</math>.</p>	<p>Answer: -6</p> <p># _____ Let <math>w</math> be the function given by <math>w(x) = \int_1^{h(x)} f(t) dt</math>. Find the value of <math>w'(3)</math>.</p>

The table below gives values of the differentiable functions  $f$ ,  $g$ , and  $h$ , and their derivatives  $f'$ ,  $g'$ , and  $h'$ , at selected values of  $x$ .

$x$	$f$	$f'$	$g$	$g'$	$h$	$h'$
0	3	-4	-5	$\frac{1}{2}$	4	$\pi$
1	4	-3	2	4	7	5
2	-2	$\pi$	17	7	-3	2
3	5	-1	$e$	2	1	$-\frac{3}{4}$
4	1	2	4	$\frac{3}{4}$	-5	1
5	3	8	6	7	4	-1

<p>Answer: <math>e^4 + 2e^3</math></p> <p># _____ Let <math>p(x) = f(g(x))</math>. Find <math>p'(1)</math>.</p>	<p>Answer: <math>\pi + 7</math></p> <p># _____ Let <math>j(x) = 3g(x) - 2f(x)</math>. Find <math>j'(1)</math>.</p>
<p>Answer: 6</p> <p># _____ If <math>m(x) = h(f(x))</math>, what is the slope of the graph of <math>m</math> at <math>x = 5</math>.</p>	<p>Answer: -2</p> <p># _____ <math>\frac{d}{dx} \left[ \frac{f(x)}{h(x)} \right]_{x=2}</math></p>
<p>Answer: 18</p> <p># _____ Find <math>\frac{d}{dx} [g(x)h(x)] \Big _{x=1}</math></p>	<p>Answer: <math>\frac{1}{4}</math></p> <p># _____ Evaluate <math>\int_3^5 [f(x)g'(x) + g(x)f'(x)] dx</math>.</p>