

Calculus Practice: Differentiating Sums and Differences of Functions 1b

For each problem, you are given a table with some values of differentiable functions $f(x)$, $g(x)$ and their derivatives. Use the table data and the rules of differentiation to solve each problem.

1)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	-1	3	-2
2	1	0	1	0
3	2	1	3	2

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(2)$

2)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	1	1	1
2	3	0	2	1
3	2	-1	3	1

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(1)$

3)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	1	1	1
2	3	0	2	1
3	2	-1	3	1

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(1)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(1)$

4)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	1	2	2	1
2	3	$\frac{1}{2}$	3	$-\frac{1}{2}$
3	2	-1	1	-2

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(1)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(2)$

5)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	-1	1	1
2	1	0	2	1
3	2	1	3	1

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(3)$

6)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	1	1	2
2	3	$-\frac{1}{2}$	3	0
3	1	-2	1	-2

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(1)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(1)$

7)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	1	3	-1
2	3	0	2	-1
3	2	-1	1	-1

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(3)$

8)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	1	2	3	-2
2	3	$\frac{1}{2}$	1	$-\frac{1}{2}$
3	2	-1	2	1

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(3)$

9)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	3	-2	2	-1
2	1	$-\frac{1}{2}$	1	$\frac{1}{2}$
3	2	1	3	2

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(2)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(2)$

10)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	3	-1	2	1
2	2	-1	3	0
3	1	-1	2	-1

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(2)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(2)$

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1	2	-1	3	-2
2	1	0	1	0
3	2	1	3	2

$$h_1'(3) = 3$$

$$h_2'(2) = 0$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(2)$

2)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	1	1	1
2	3	0	2	1
3	2	-1	3	1

$$h_1'(3) = 0$$

$$h_2'(1) = 0$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(1)$

3)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	1	1	1
2	3	0	2	1
3	2	-1	3	1

$$h_1'(1) = 2$$

$$h_2'(1) = 0$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(1)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(1)$

4)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	1	2	2	1
2	3	$\frac{1}{2}$	3	$-\frac{1}{2}$
3	2	-1	1	-2

$$h_1'(1) = 3$$

$$h_2'(2) = 1$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(1)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(2)$

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x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	-1	1	1
2	1	0	2	1
3	2	1	3	1

$$h_1'(3) = 2$$

$$h_2'(3) = 0$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(3)$

6)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	1	1	2
2	3	$-\frac{1}{2}$	3	0
3	1	-2	1	-2

$$h_1'(1) = 3$$

$$h_2'(3) = 0$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(1)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(3)$

7)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	2	1	3	-1
2	3	0	2	-1
3	2	-1	1	-1

$$h_1'(3) = -2$$

$$h_2'(2) = 1$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(2)$

8)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	1	2	3	-2
2	3	$\frac{1}{2}$	1	$-\frac{1}{2}$
3	2	-1	2	1

$$h_1'(3) = 0$$

$$h_2'(2) = 1$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(3)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(2)$

9)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	3	-2	2	-1
2	1	$-\frac{1}{2}$	1	$\frac{1}{2}$
3	2	1	3	2

$$h_1'(2) = 0$$

$$h_2'(1) = -1$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(2)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(1)$

10)

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	3	-1	2	1
2	2	-1	3	0
3	1	-1	2	-1

$$h_1'(2) = -1$$

$$h_2'(1) = -2$$

Part 1) Given $h_1(x) = f(x) + g(x)$, find $h_1'(2)$

Part 2) Given $h_2(x) = f(x) - g(x)$, find $h_2'(1)$