

Table 3.3

x	$f'(x)$	$g(x)$	$g'(x)$
1	5	2	3
2	7	1	4

EXAMPLE 3 Calculating derivatives at a point Let $h(x) = f(g(x))$. Use the values in Table 3.3 to calculate $h'(1)$ and $h'(2)$.

$$h(x) = f(g(x))$$

template

$$h'(x) = f'(g(x)) \cdot g'(x) \quad \leftarrow \text{chain rule}$$

$$h'(1) = f'(g(1)) \cdot g'(1)$$

$$= f'(2) \cdot 3$$

$$= 7 \cdot 3 = 21$$

$$h'(2) = f'(g(2)) \cdot g'(2) = f'(1) \cdot 4$$

$$= 5 \cdot 4 = 20$$