



In the graph above, $f(x)$ is the straight line and $g(x)$ is the curved function.

Given the function $H(x) = f(g(x))$, estimate $H'(3)$.

This can be done graphically; you don't need to figure out what functions $f(x)$ and $g(x)$ are.

$$\begin{aligned}
 H'(x) &= f'(g(x)) \cdot g'(x) \\
 &= f'(g(3)) \cdot g'(3) \\
 &= f'(1) \cdot 2 \leftarrow \text{ESTIMATE FROM GRAPH} \\
 &= -2 \cdot 2
 \end{aligned}$$

$$H'(3) \approx \underline{\underline{-4}}$$