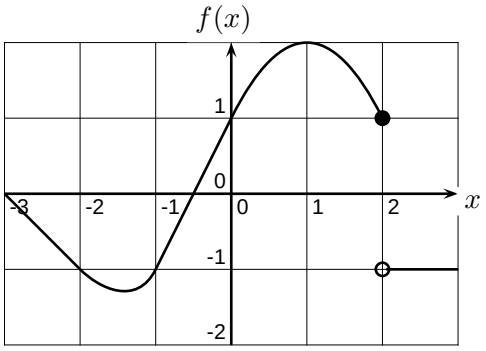
6. The graph of a function f is shown below, together with a table of values for a function g. Define a third function h by $h(x) = f(x-2)$.



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

(a) (2 points each) Using the information given, find

i. $f(g(1)) = 1$

ii. $g(h(2)) = 2$

iii. $h(f(0)) = -1$

(b) (3 points) Is it possible that $g = f'$? Briefly justify your answer.

No. There are several reasons: for example, f is not differentiable at $x = 2$, so f' is not defined at 2, but g is defined at 2. Also, from the graph we see that f is increasing on $[-1, 1]$, but g takes negative values there.

(c) (5 points) Is it possible that $g = h'$ on the interval where h is known? Justify.

This is possible. The graph of h is the same as that of f, shifted 2 units to the right. Thus we have information about h on the interval $[-1, 3]$, and the values of g on this interval appear to agree with the slopes of the tangent lines to the graph of h.