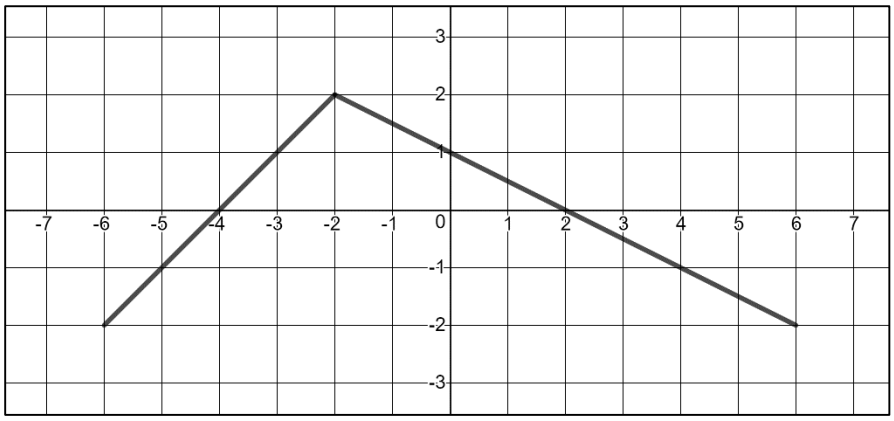
FTC WS #2 Name_____

The function f is defined on the closed interval $[-6,6]$. The graph consists of two line segments and is shown below. Let g be the function defined at $g(x) = \int_{-2}^{x} f(t)\,dt$.



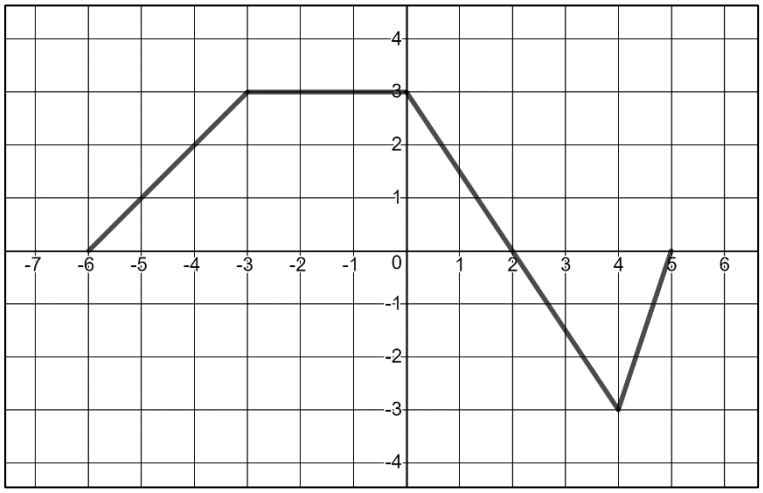
Find each of the following.

1. $g(-4)$
2. $g(-2)$
3. $g(4)$
4. $g'(-6)$
5. $g'(-2)$
6. $g'(2)$
7. $g''(-4)$
8. $g''(-1)$
9. $g''(5)$

Answer the following about the function g.

10. For what values of x is $g'(x) = 0$
11. When is the $g(x)$ increasing?
12. When is the $g(x)$ decreasing?
13. When is the $g(x)$ concave upward?
14. When is the $g(x)$ concave downward?
15. Find the absolute extrema of $g(x)$.

The graph, $h'(x)$, consists of four line segments and is defined on the closed interval $-6 \leq x \leq 5$.



16. Write an expression for $h(x)$ that involves an integral when $h(-3) = -2$:

17. Using the function $h(x)$ from #16, find the y values of the endpoints, critical numbers, and points of inflections. Then graph.