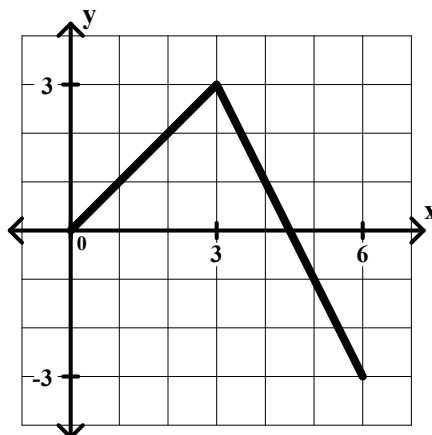


Advanced Challenge Level 2 Problem #23

The graph of the function f shown below consists of 2 line segments.



Let g be the function given by $g(x) = \int_0^x f(t) dt$ for any x in the domain of f .

- Find $g(2)$, $g'(2)$, and $g''(2)$.
- Find $g(5)$, $g'(5)$, and $g''(5)$.
- For what values of x is g increasing?
- For what values of x is the graph of g concave down?
- Sketch the graph of g .