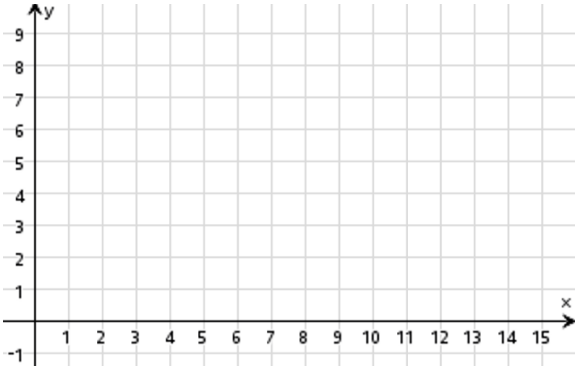
Name _____ **Hour** _____

Skill Builder: Topics 6.4 & 6.5 – The Fundamental Theorem of Calculus and Accumulation Functions Interpreting the Behavior of Accumulation Functions Involving Area

1. Let f be a function whose graph consists of 5 line segments and a semicircle as shown in the figure below.
Let $g(x) = \int_0^x f(t)dt$.

Find each of the following values.

a. $g(0)$	**b.** $g(2)$	**c.** $g(4)$
d. $g(6)$	**e.** $g(11)$	**f.** $g(15)$
g. $g'(3)$	**i.** Sketch a possible graph of g in the coordinate plane below. 	
h. $g'(13)$		

2. If $G(x) = \int_2^x \left(\sqrt{t^4+1} + t^3 - 3t\right)dt$, find a value x, $-3 \le x \le 3$, for which g has a local maximum. Explain your reasoning.