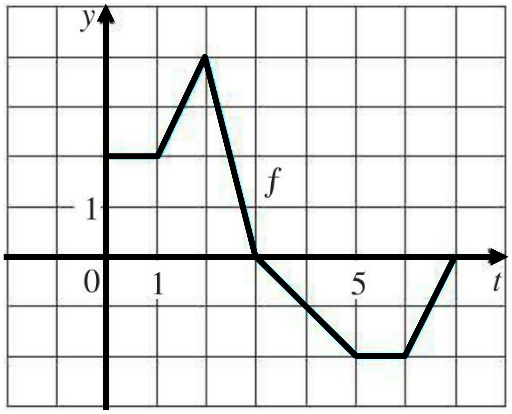
Class Drill: Area Function

The graph of $f(t)$ is shown at right.

The function $g(x)$ is defined by the equation

$$g(x) = \int_{t=0}^{t=x} f(t)dt$$

g is an *area function for f*



Part 1: The first goal is to build a graph of $g(x)$.
On the back of this page are eight copies of the graph of $f(t)$.

(a) Using these graphs, make eight pictures that illustrate the quantity

$$g(x) = \int_{t=0}^{t=x} f(t)dt$$

for the eight x values $x = 0,1,2,3,4,5,6,7$

(b) Using the pictures, find the value of $g(x)$ for $x = 0,1,2,3,4,5,6,7$ and write those values in the table at right.

x	$g(x)$
0	
1	
2	
3	
4	
5	
6	
7	

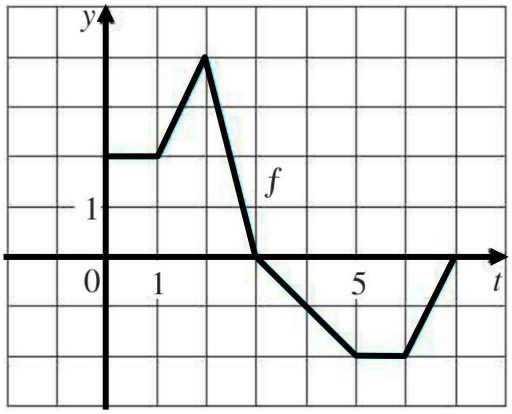
(c) Using the data from your table, make a graph of $g(x)$ on the interval $0 \leq x \leq 7$.

Part 2: Questions to be answered ***without*** using your graph from **Part 1**.

(d) What is the value of $g'(2)$?

(e) What is the value of $g'(5)$?

(e) At what x value does g have a local max?


y
1
0
1
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t
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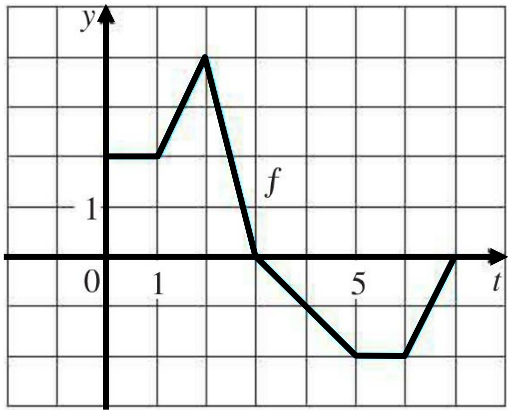
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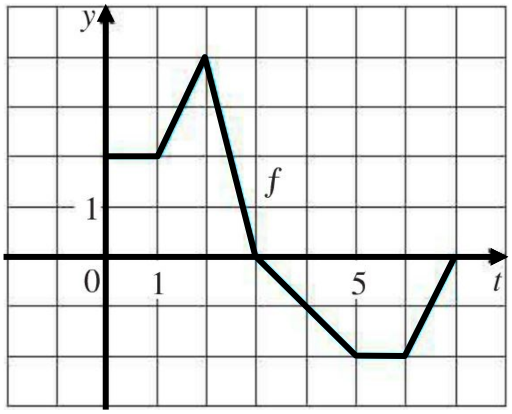
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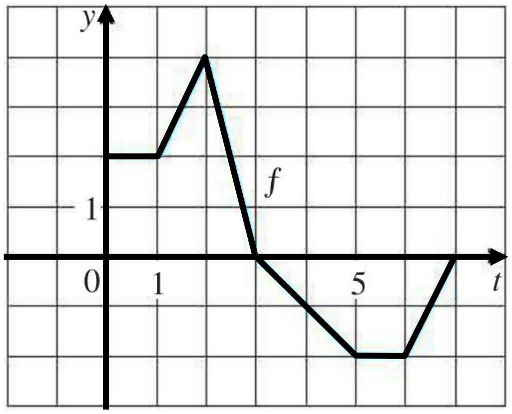
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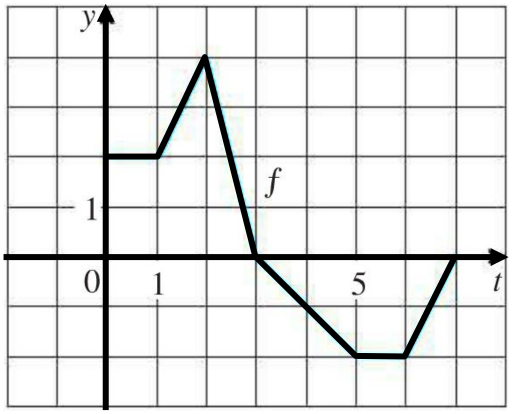
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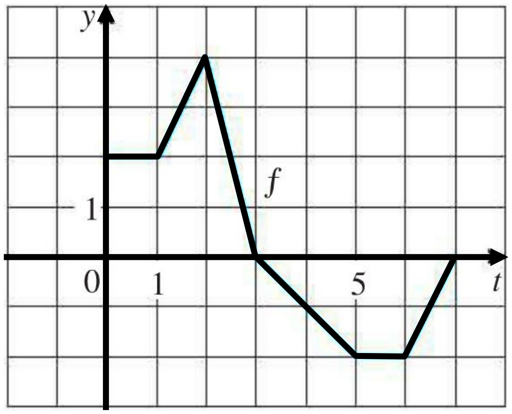
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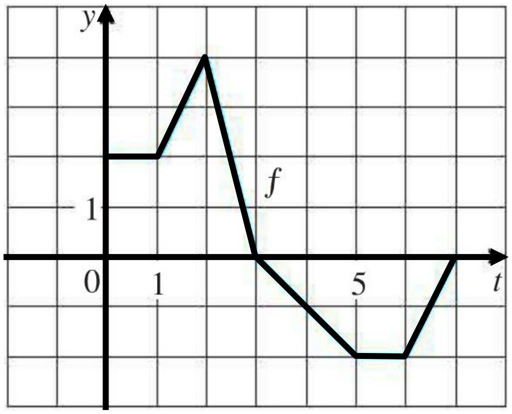
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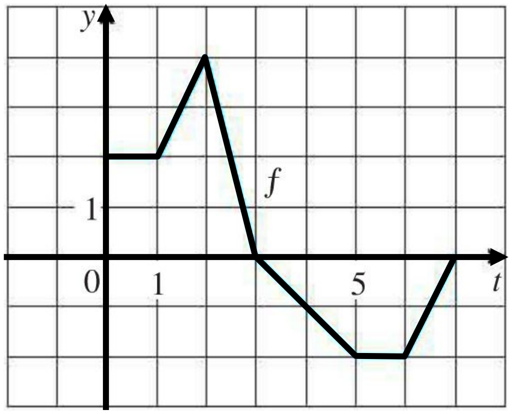
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