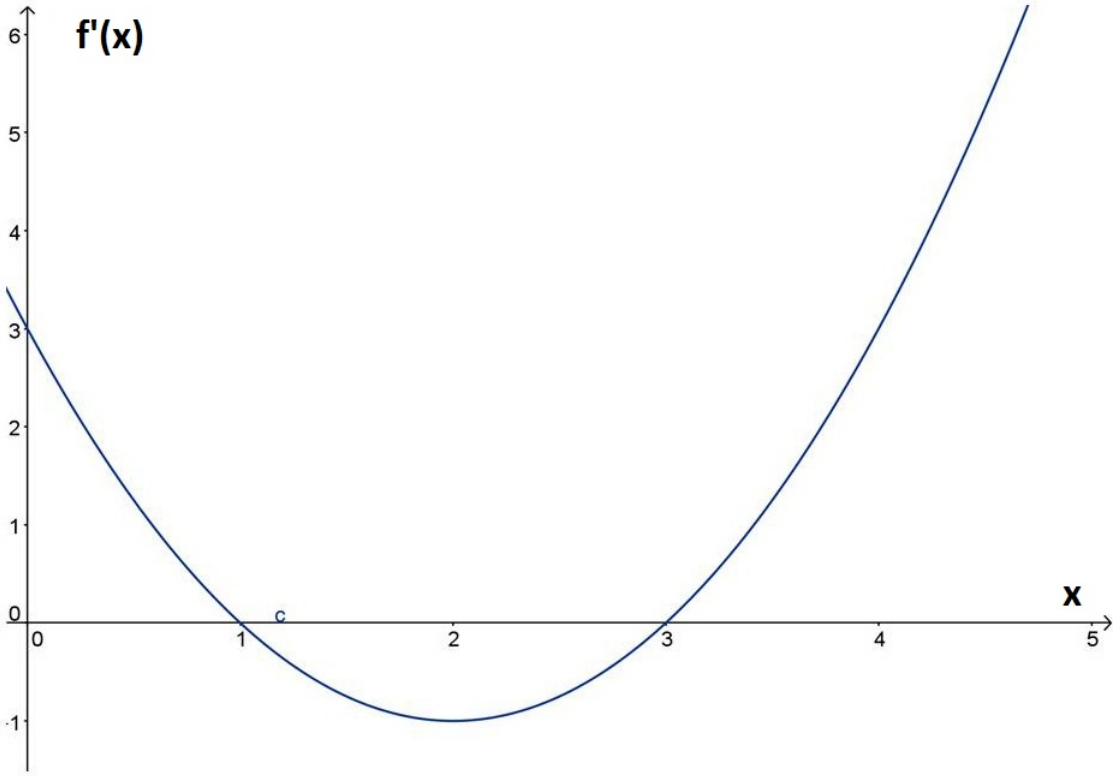
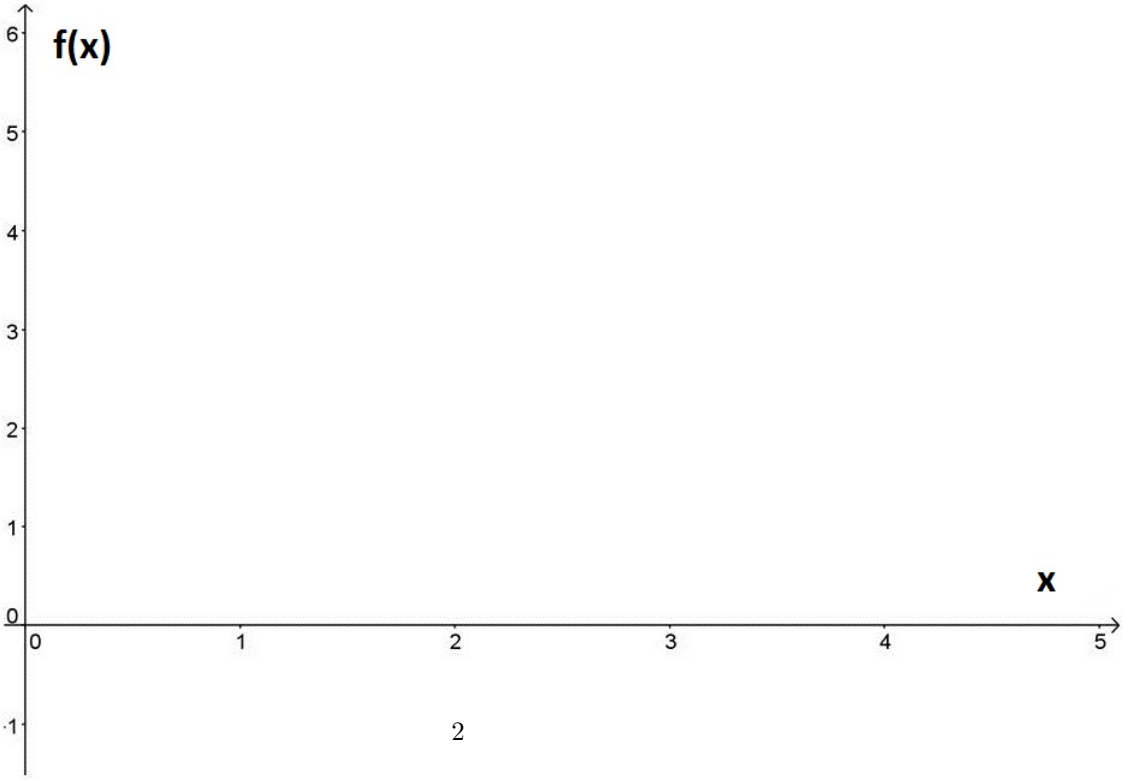
Practice Sketching Antiderivative from Graph of Derivative

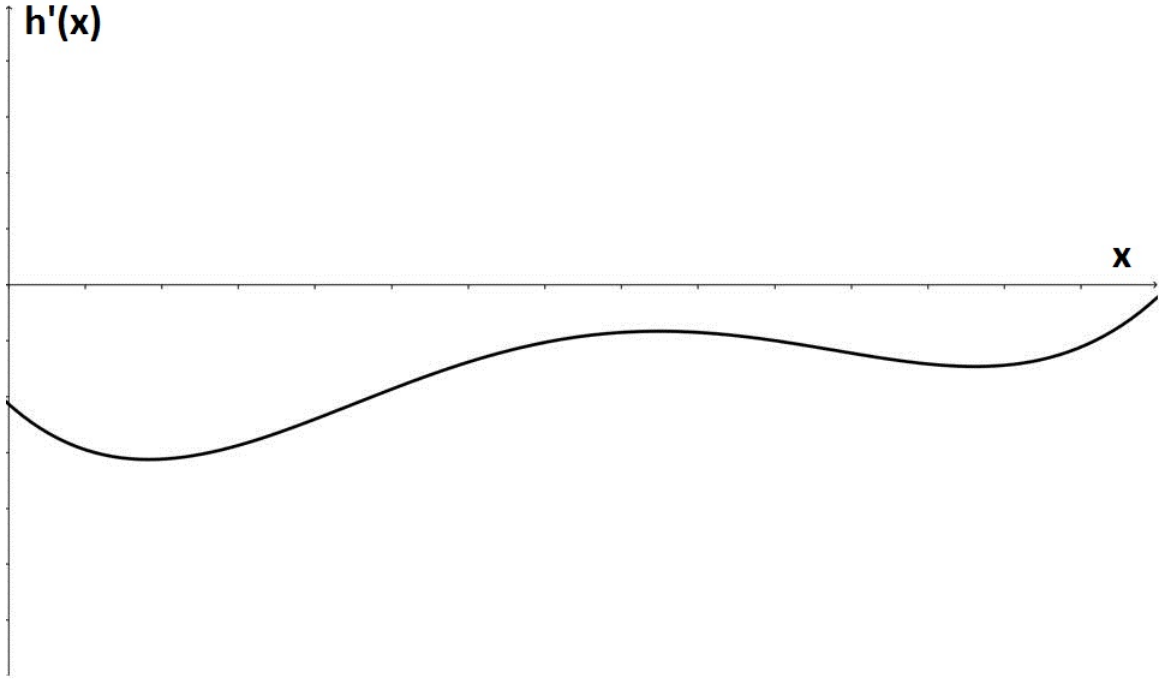
This worksheet allows student to practice techniques from Math 142 Lesson 5, where student has memorized the relationships between $f'(x)$ and $f(x)$, as given in the following table, and sketches the graph of the Antiderivative given the graph of the Derivative, identifying important points such as critical points (critical numbers) and inflection points.

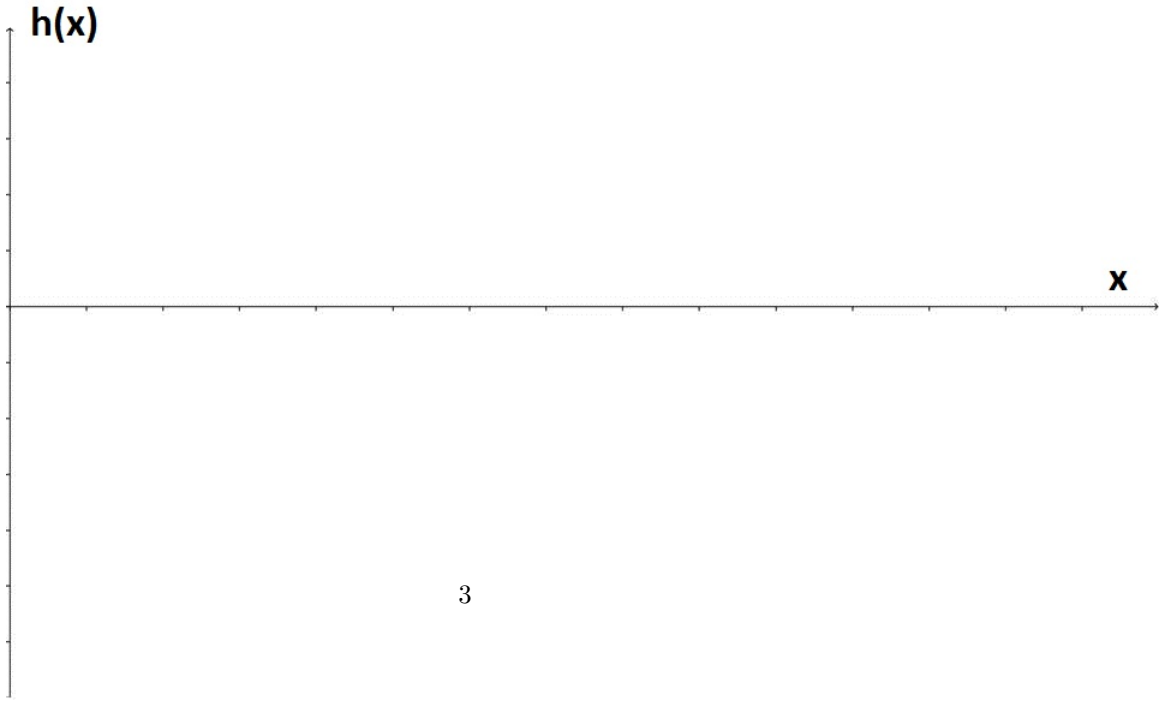
Relationships that help us relate graphs of $f'(x)$ and $f(x)$:

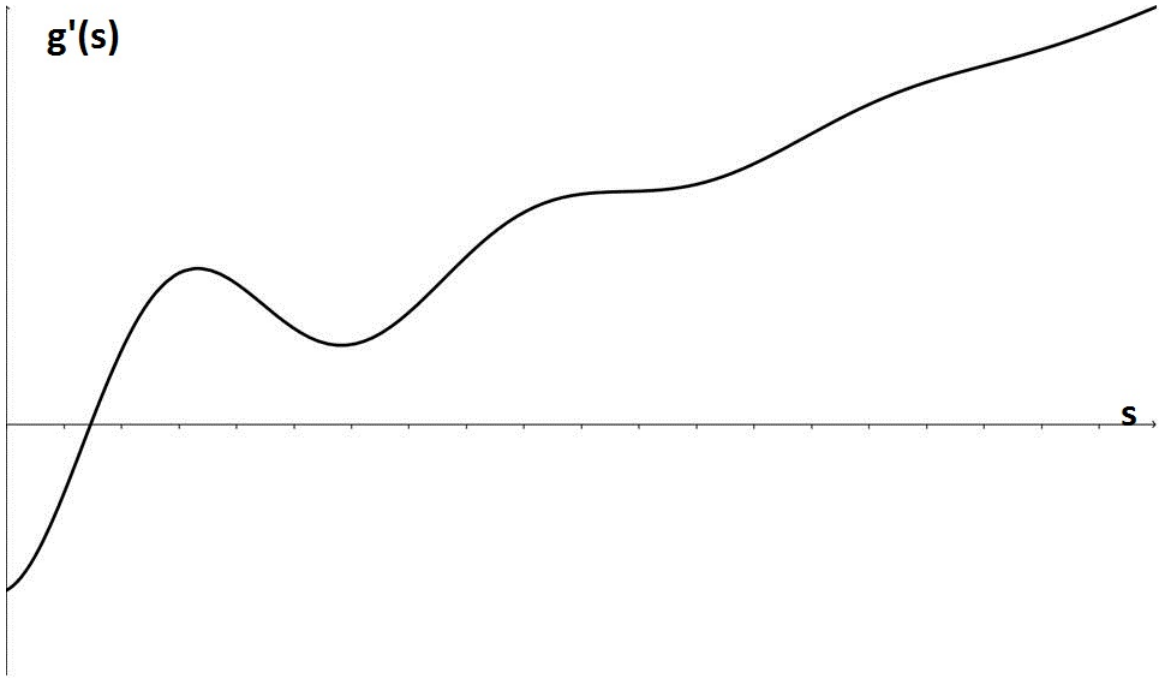
When $f'(x)$ has this attribute:	This is what we know about $f(x)$:
$f'(x) > 0$	$f(x)$ is increasing
$f'(x) < 0$	$f(x)$ is decreasing
The sign of $f'(x)$ transitions from $+$ to $-$	$f(x)$ has a local max at the transition
The sign of $f'(x)$ transitions from $-$ to $+$	$f(x)$ has a local min at the transition
$f'(x) = 0$ or $f'(x)$ is undefined	There is a critical point in $f(x)$
$f'(x)$ is increasing	$f(x)$ is concave up
$f'(x)$ is decreasing	$f(x)$ is concave down
$f'(x)$ transitions from increasing ($\nearrow$) to decreasing ($\searrow$)	$f(x)$ has inflection point at the transition
$f'(x)$ transitions from decreasing ($\searrow$) to increasing ($\nearrow$)	$f(x)$ has inflection point at the transition

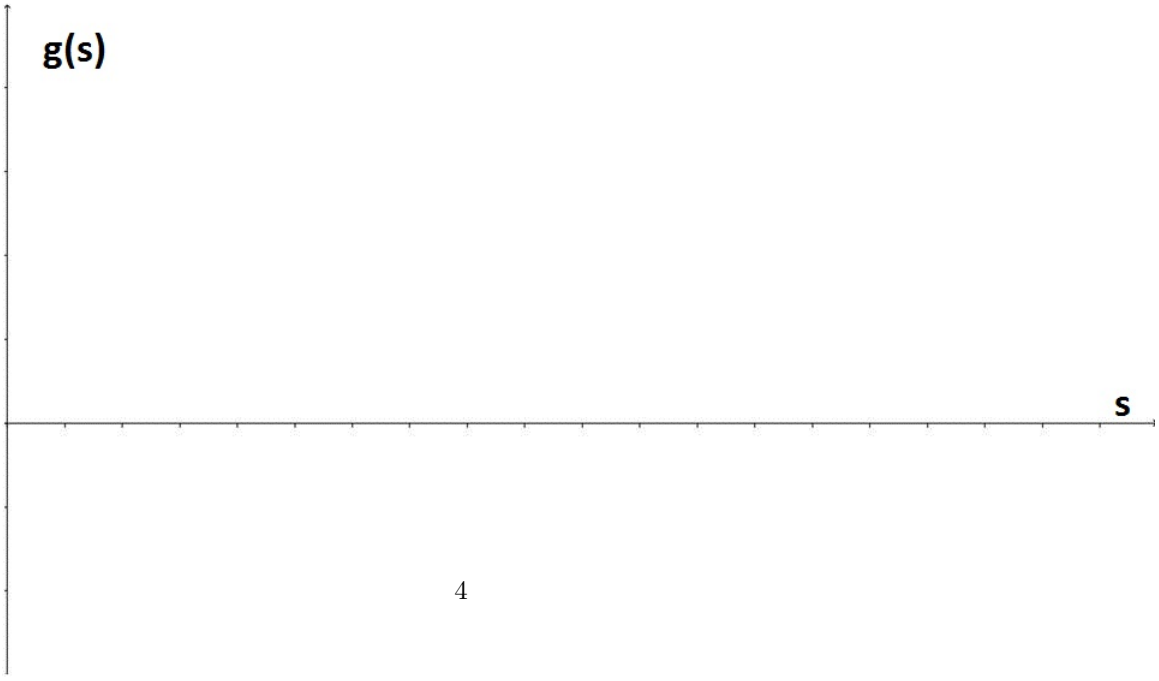

f'(x)
6
5
4
3
2
1
0
-1
c
x
0
1
2
3
4
5

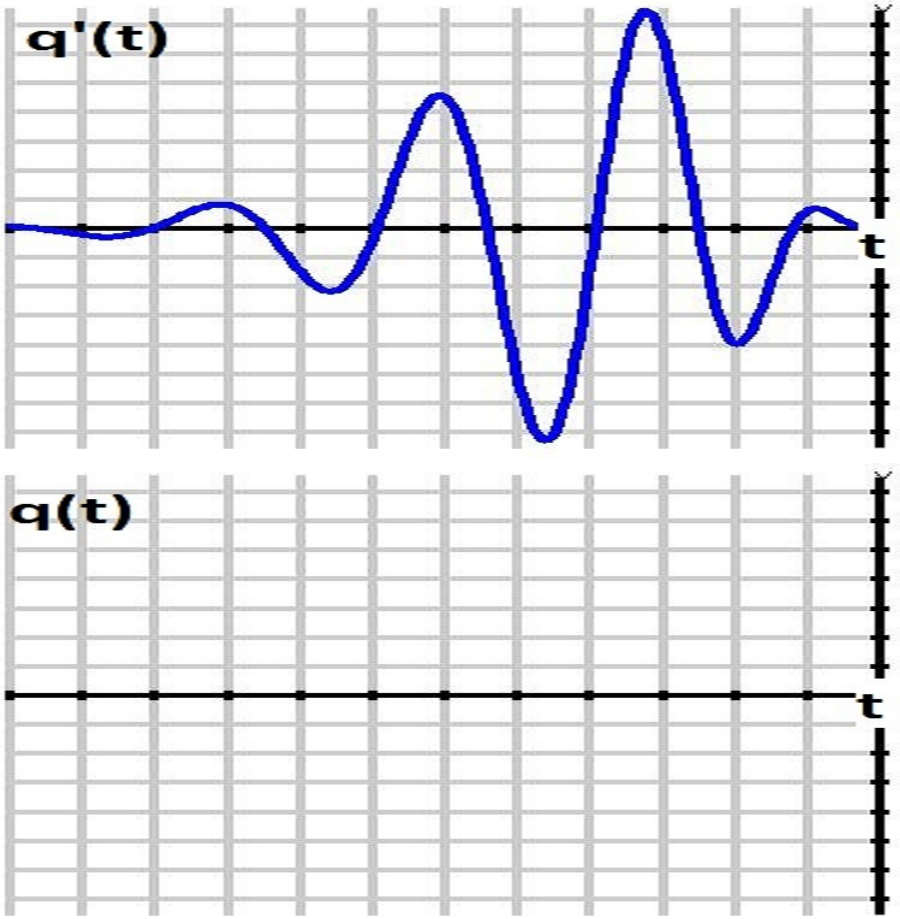

f(x)
6
5
4
3
2
1
0
-1
x
0
1
2
3
4
5


h'(x)
x


h(x)
x


g'(s)
s


g(s)
s


q'(t)
t
q(t)
t