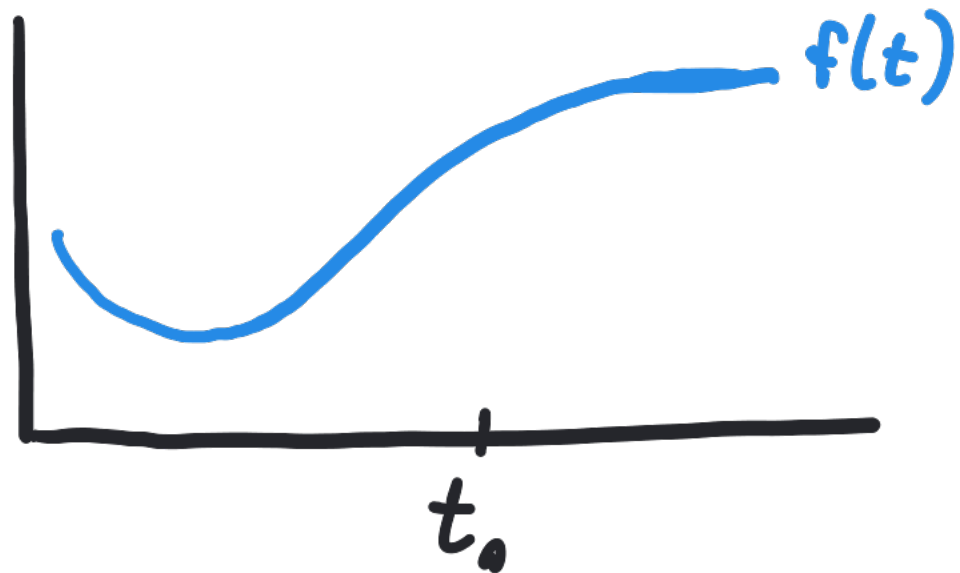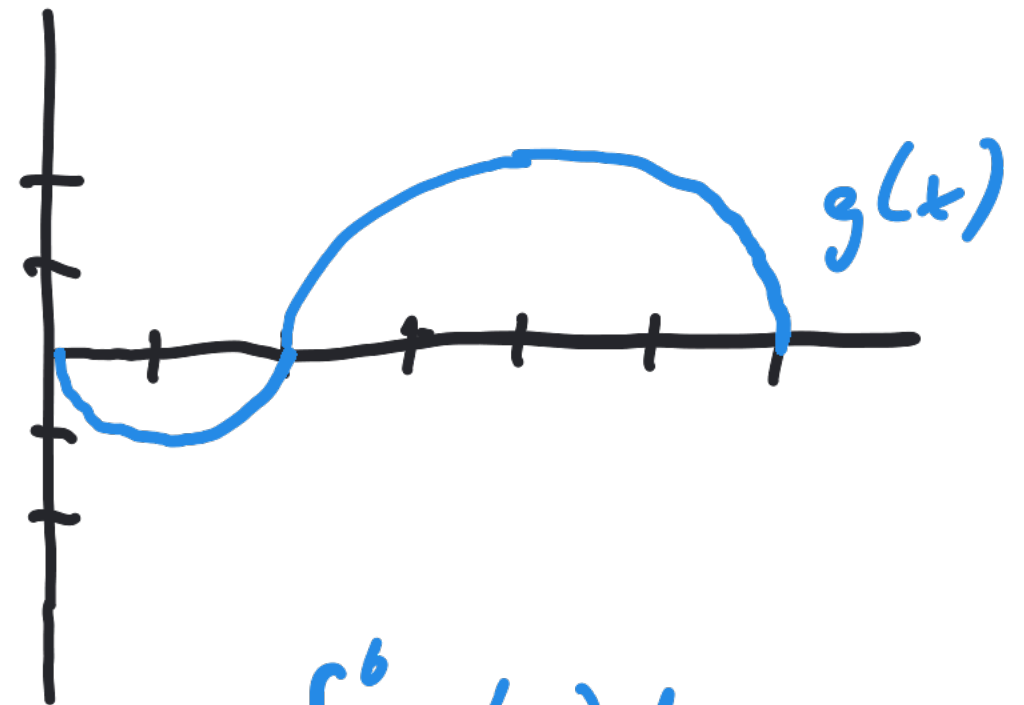**1.** $f(t)$ = revenue of company on day t

$f(t)$

t_0

a) is $f'(t_0)$ positive or negative?
b) is $f'(t)$ increasing or decreasing when $t = t_0$?

2.

$g(x)$

Find $\int_0^6 g(x)\,dx$.
(The two parts of the graph are semicircles.)

3. Compute:

a) $\frac{d}{dt}\left(\sin(3t^4)\right)$

b) $\frac{d}{dx}\left(x \ln(x)\right)$

4. One mathematician says,

"$x^2 + y^2 = 4$ is a circle around the origin with radius 2."

Another says, "Huh? $x^2 + y^2 = 4$ is an equation. What do you mean that it's a circle?"

Can you think of anything to say in response