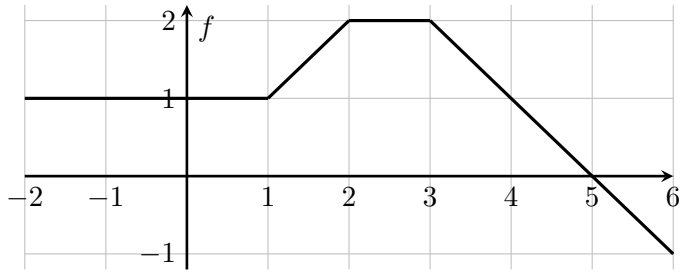
**Area accumulation functions and the FTC, graphical perspective**

1. Example:




(a) $F(x) = \int_0^x f(t)\,dt$. $F'(x) =$ _____

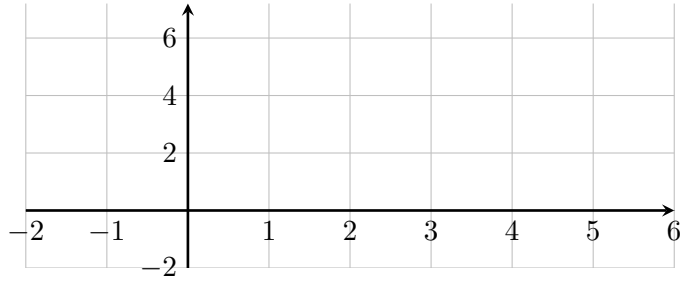
(b) Evaluate the following:

| | | |
|---|---|---|
| $F(0) =$ | $F(2) =$ | $F(5) =$ |
| $F'(0) =$ | $F'(2) =$ | $F'(5) =$ |
| $F''(0) =$ | $F''(2) =$ | $F''(5) =$ |

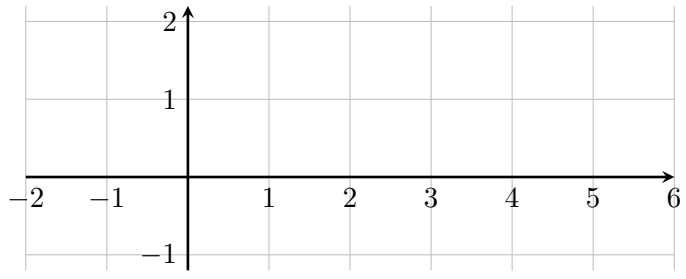
(c) Find a formula for $F'(x)$ between $x = 1$ and $x = 2$.

(d) Find a formula for $F(x)$ between $x = 1$ and $x = 2$

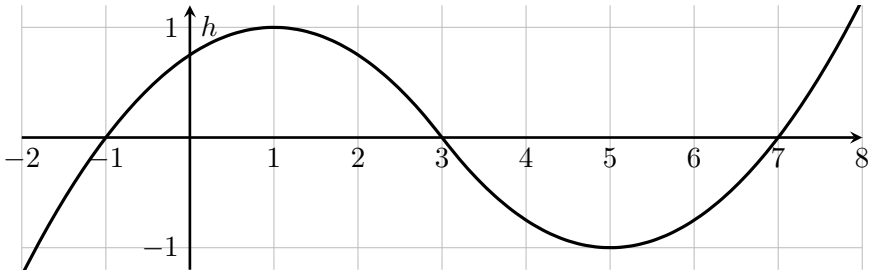
(e) Sketch $F(x)$.




(f) Sketch $F'(x)$.



2. Example:




(a) $H_1(x) = \int_0^x h(t)\,dt$. $H_1'(x) =$ _____

At what $x$ values does $H_1(x)$ have:

critical points _____

local minima _____

local maxima _____

inflection pts _____

(b) Now $H_2(x) = \int_{-1}^x h(t)\,dt$.

At what $x$ values does $H_2(x)$ have:

critical points _____

local minima _____

local maxima _____

inflection pts _____

(c) What is the difference between $H_1(x)$ and $H_2(x)$?