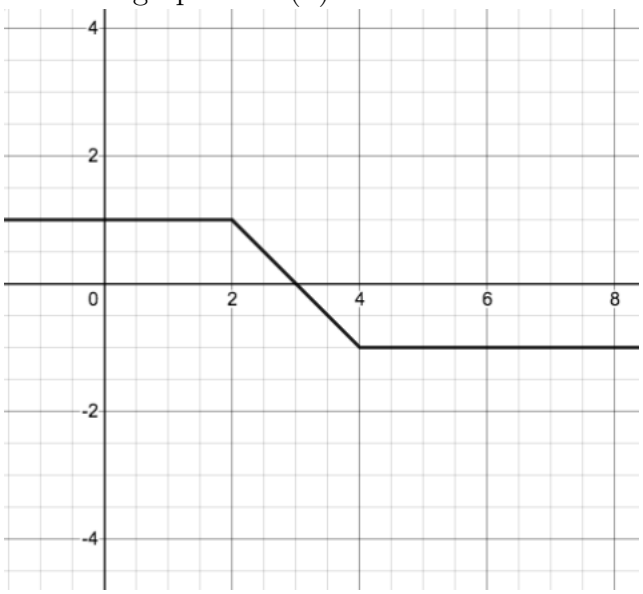
Name:

6.1 Antiderivatives Graphically

1. This is a graph of $F'(x)$.



   (a) Starting at $F(0) = 0$, sketch a graph of $F(x)$. Be as accurate as you can.

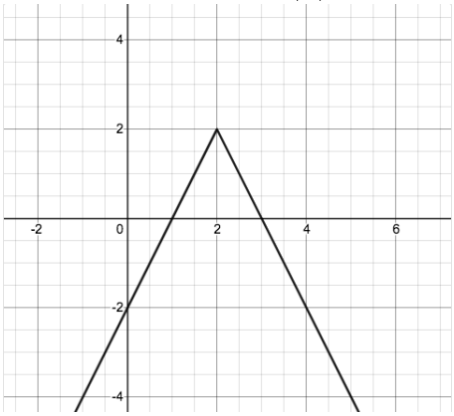
   (b) Let's do it again with a different starting point. Starting at $F(0) = -2$, sketch a graph of $F(x)$.

   (c) Check your work using Desmos.

   (d) Summarize your findings: If you are given a graph of $F'(x)$, how can you construct the original function $F(x)$?

   (e) Are antiderivatives unique? What is similar about all of the antiderivatives of $F(x)$?

2. This is a graph of $G'(x)$.

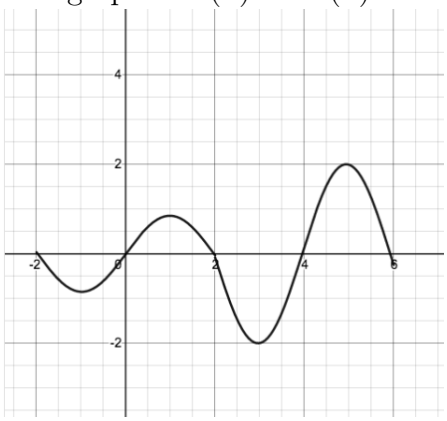


(a) Sketch $G(x)$ where $G(0) = 0$.

(b) Where is $G(x)$ increasing? Why?

(c) Where is $G(x)$ concave up? Why?

3. The graph of $h(x) = H'(x)$ is shown.



(a) Where is $H(x)$ increasing? Why?

(b) Where is $H(x)$ concave up? Why?

(c) Sketch $H(x)$ where $H(0) = 0$.