Obj: to find stuff from integral functions.

Let \( g(x) = \int_0^x f(t) \, dt \)

@ Find \( g(-1), g'(-1), \) and \( g''(-1) \).

\[
g(-1) = \int_0^{-1} f(t) \, dt \rightarrow \text{area from } 0 \text{ to } -1
\]

\[
= -\int_{-1}^0 f(t) \, dt
\]

\[
g(-1) = \boxed{-\frac{1}{2}}
\]

\[
g'(-1) = \frac{d}{dx} \int_0^x f(t) \, dt
\]

\[
= f(x) \bigg|_{x=-1}
\]

\[
= f(-1)
\]

\[
g'(-1) = 1
\]
If \( g'(x) = f(x) \)

then \( g''(x) = f'(x) \).

\( g''(-1) = f'(-1) \rightarrow \) slope on \( f \)

\[ g''(-1) = -1 \]

\( \text{at } x = -1 \)

\[ -2 < x < 1.5 \]

\( \text{b) Where is } g(x) \text{ increasing?} \)

\( g'(x) \text{ is positive} \)

\( f(x) \text{ is positive} \)

\( \text{c) What are the Pts of inflection of } g(x)? \)

rel max or min of \( g'(x) \)

rel max or min of \( f(x) \)

\[ x = 0 \text{ and } 1 \]
Graph $g(x)$ on $[-2, 2]$.

$g(x) = \int_0^x h(t) \, dt$

$g(0) = 0$

So EZ!