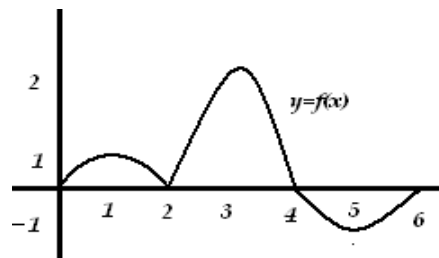


FTC part 1

Let $H(x) = \int_0^x f(t) dt$, where f is the continuous function from $[0, 12]$ graphed below.



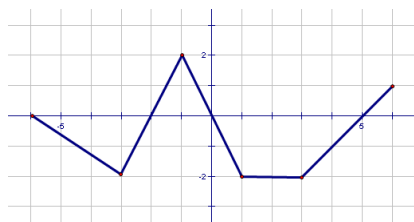
- On what interval is H decreasing? Explain.
- On what interval is the graph of H concave down? Explain.
- Where (if any) is the absolute minimum of $H(x)$? Explain.

Find $\frac{dy}{dx}$ for each of the following:

a) $y = \int_3^x \sqrt{1+t} dt$

b) $y = \int_{e^{-x}}^{e^x} \ln t dt$

The function $H(x)$ is defined as $H(x) = \int_{-6}^x f(t) dt$ where the graph of $y = f(x)$ is shown below:



Find the value of $H(0)$

On what intervals is $H(x)$ decreasing?

Find the value of $H'(4)$

