4. [10 points] A portion of the graph of \( y = f(x) \) is shown below.

The area of shaded region \( A \) is 3, and the area of shaded region \( B \) is 3.

Let \( F(x) \) be the continuous antiderivative of \( f(x) \) with \( F(0) = 1 \) whose domain includes the interval \(-6 \leq x \leq 4.\)

a. [3 points] For what value(s) of \( x \) with \(-6 < x < 4\) does \( F(x) \) have local extrema?

If there are none of a particular type, write NONE. You do not need to justify your answers.

**Answer:** local max(es) at \( x = \frac{-2}{\phantom{0}} \)

**Answer:** local min(s) at \( x = \frac{2}{\phantom{0}} \)

b. [7 points] Recall that \( F(x) \) is the continuous antiderivative of \( f(x) \) with \( F(0) = 1.\) On the axes below, draw the graph of \( y = F(x) \) on the interval \(-6 \leq x \leq 4.\)

Be sure that you pay close attention to each of the following:

- the value of \( F(x) \) at each of \( x = -6, -4, -2, 0, 2, 4 \)
- where \( F \) is/is not differentiable
- where \( F \) is increasing/decreasing/constant
- the concavity of the graph of \( y = F(x) \)