6. (8 pts) The function $f(x)$ is graphed below. Accurately sketch the antiderivative $F(x)$ of $f(x)$. Assume that $F(0) = 1$.

\[ y = \frac{1}{2}x - 1 \]

\[ y = -x - 1 \]

4. Parabola, concave down, max at $x = -1$, symmetric from $x = 0$ to $x = 2$.

Equation:

\[ -\frac{x^2}{2} - x + 1 \]

1. Start from here!

2. Line

\[ y = \frac{1}{2}x - 1 \]

3. Parabola, concave up, min at $x = 2$.

Equation:

\[ \frac{x^2}{4} - x + 1 \]

3. Constantly 0 for $x > 0$. 