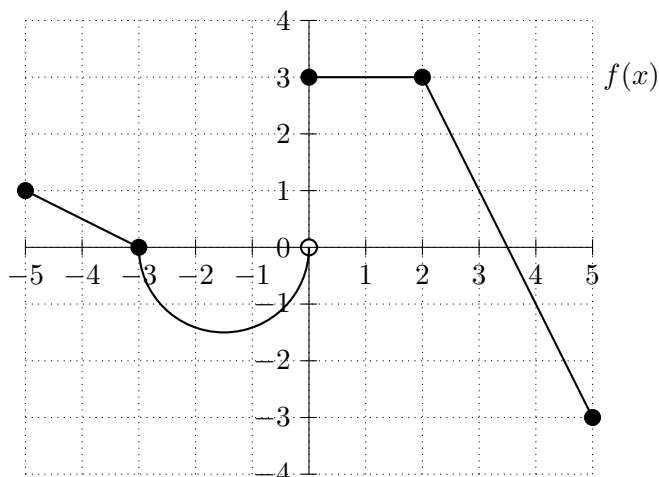**2.** [15 points] Below is a graph of the function $f(x)$, comprised of line segments and a semicircle. Let $F(x)$ be an anti-derivative of $f(x)$ with $F(2) = 3$.



**a.** [4 points]   Find both coordinates of the points where $F(x)$ attains its maximum and minimum values on the interval $-5 \leq x \leq 5$. No explanation is necessary.

**Min:**( ____0____ , ___−3___ )   **Max:** ( ___3.5___ , ___5.25___ )

**b.** [4 points] Find all values of $x$ where $F(x)$ is concave down. Write your answer in the space provided. No explanation is necessary.

$$-5 < x < -1.5 \textbf{ and } 2 < x < 5$$

**c.** [7 points]  Carefully sketch a graph of $F(x)$ on the axes provided below. Be sure to clearly indicate continuity and differentiability in your graph.