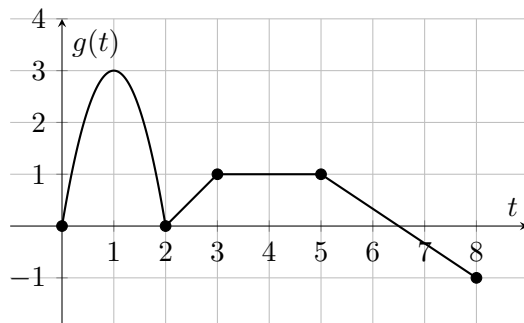


2. [14 points] Shirley is trying to measure the right amount of sugar into a bowl for 8 seconds. The function $g(t)$ gives the rate (in cups/second) at which the amount of sugar in the bowl is changing t seconds after she starts measuring. The graph is linear on the intervals $[2, 3]$, $[3, 5]$, $[5, 8]$, and quadratic on $[0, 2]$ with formula $g(t) = 6t - 3t^2$:



Sketch a detailed graph of $G(t)$, the antiderivative of $g(t)$, giving the amount of sugar in the bowl at time t assuming there are 5 cups of sugar in the bowl after 3 seconds. Only graph $G(t)$ on the interval $[0,8]$. Make sure to clearly label the output and input of the points at $t = 0, 2, 3, 5, 8$. Be sure to make it clear where the graph is concave up, concave down, or linear and where it is increasing or decreasing. Use **hand-drawn** axes similar to those given below.

