Problems - HW 1

Tuesday, August 18

1. Let
$$F(x) = \int_{-x^2}^{5} \sin(x^3)dx.$$
Compute $F'(x)$.

2. The complete graph of a function f is shown in figure 1 on the reverse. For x in the domain of f, define $F(x)$ by
$$F(x) = \int_{3}^{x} f(x)dx.$$
   (a) Sketch the graph of $F(X)$.
   (b) Sketch the graph of $F'(x)$.

3. Referring again to the complete graph of a function f shown in figure 1 on the reverse, define $G(x)$ by
$$G(x) = \int_{0}^{2x} f(x)dx.$$
   (a) Sketch the graph of $G(X)$.
   (b) Sketch the graph of $G'(x)$.

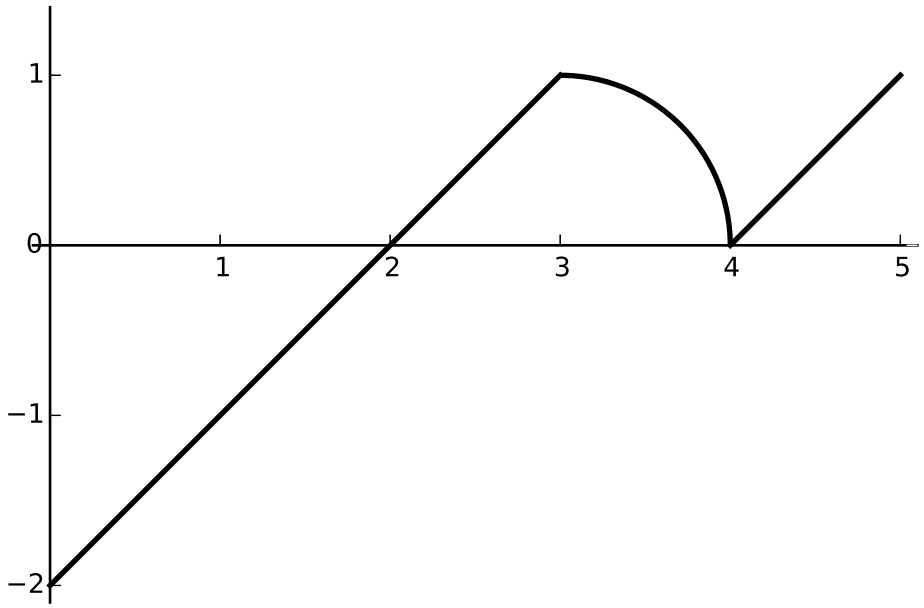

Figure 1: The graph for the last two problems