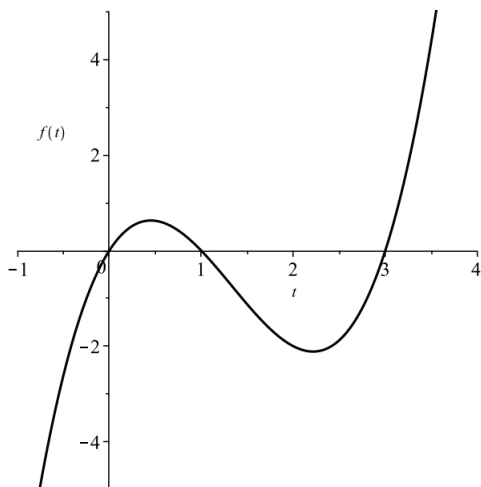Consider the continuous function f sketched below:

(a) Is $\int_1^0 f(t)\ dt$ positive, zero, or negative? Give reasons for your answer.

(b) Is $\int_1^3 f(t)\ dt$ larger or smaller than $\int_1^0 f(t)\ dt$? Give reasons for your answer.

(c) Is $\int_1^4 f(t)\ dt$ larger or smaller than $\int_1^3 f(t)\ dt$? Give reasons for your answer.

(d) Where do the local maximums and local minimums of the function $F(x) = \int_1^x f(t)\ dt$ occur? Give reasons for your answer.

(e) Estimate the intervals where the graph of $F(x)$ is concave up and and where the graph of $F(x)$ is concave down.

(f) Let $G(x) = \int_0^x f(t)\ dt$. How would you answer parts (d) and (e) for $G(x)$? Explain.