Laboratory Calculus Worksheet 2
Week of September 2, 1996
Group Copy

Instructions: Work on the following problems during this laboratory period. Record the results of your group work in the space provided.

Date: ____________________

Team Members:

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1. Let $F(x) = \int_0^x f(t)dt, G(x) = \int_1^x f(t)dt$, and $H(x) = \int_{-2}^x f(t)dt$.

   (a) Suppose that $f(x) = 1$. Find symbolic expressions for the functions F, G, and H.

   (b) Suppose that $f(x) = 3x$. Find symbolic expressions for the functions F, G, and H.

   (c) Suppose that $f(x) = 3x + 1$. Find symbolic expressions for the functions F, G, and H.

2. Let a be a constant, $f(x) = 2 - x$, and $A_f(x) = \int_a^x f(t)dt$.

   (a) Evaluate $A_f(a)$.

   (b) Find a symbolic expression for $A_f(x)$.

   (c) Show that A_f is an antiderivative of f.

   (d) On the same axes, plot f and A_f for $a = 0, a = 2$, and $a = -1$.