4. [12 points] The function $f(x) = \int_0^x 10e^{-t^2}dt$ appears frequently in statistical analysis.

a. [6 points] Without calculating them, order $\int_0^2 f(x)dx$, MID(4), and TRAP(4) from smallest to biggest, where MID(4) and TRAP(4) are approximations for $\int_0^2 f(x)dx$. Show all work to justify your answer.

b. [2 points] Consider the following table, which evaluates $f(x) = \int_0^x 10e^{-t^2}dt$ for the specified values of x.

x	0	0.5	1	1.5	2
$f(x)$	A	4.613	7.468	8.562	B

What are the values of A and B? Write your answers on the spaces provided, rounding to three decimal places.

A =_____ B =_____

c. [4 points] Using the table provided in part (b) and the answers you found in part (b), calculate LEFT(4) and RIGHT(4) to estimate the integral $\int_0^2 f(x)dx$. Be sure to show enough work to support your answer.