2.*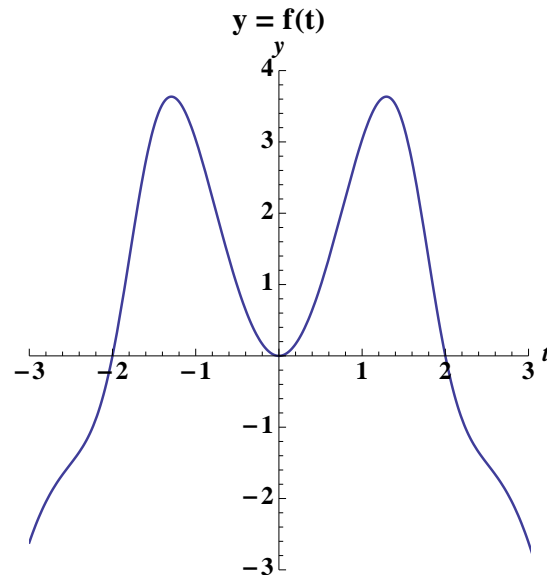* [14 points] Let $F(x) = \int_0^x f(t)dt$, where the graph of $f(t)$ is given below. In each blank space below, determine whether the number on the left is greater than, less than, or equal to the number to the right, and fill the blank with the symbol $>$, $<$, or $=$ accordingly. If there is not enough information to compare the given pair of numbers, write **none in the blank space.

y = f(t)

$F(-2)$ _____ $F(0)$ $F(-2)$ _____ $F(2)$

$F(2)$ _____ $F(3)$ $F(2)$ _____ 8

$F'(-2)$ _____ $F'(0)$ $F''(-2)$ _____ $F''(0)$

$\frac{1}{5}\int_{-2}^3 f(t)dt$ _____ Average of $f(x)$ on $[0, 2]$.

Solution:

$F(-2) < F(0)$ $F(-2) < F(2)$

$F(2) > F(3)$ $F(2) < 8$

$F'(-2) = F'(0)$ $F''(-2) > F''(0)$

$\frac{1}{5}\int_{-2}^3 f(t)dt <$ Average of $f(x)$ on $[0, 2]$.