TMATH 125 Quiz 2

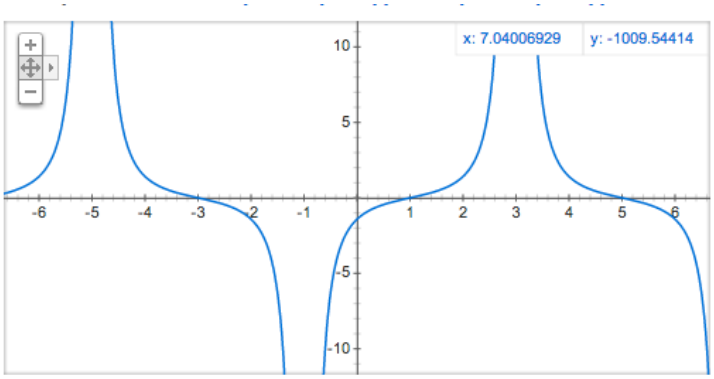
Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. No credit is given without supporting work.

1. Given that we know $f'(t) = \dfrac{2}{1+t^2}$, (notice the *derivative*!!!) answer the following:

   (a) [2] (§5.4 #16) Find $\displaystyle\int f'(t)\,dt$

   (b) [2] (WebHW4 #2) If $f'(1) = 0$, find $f(t)$.

2. Let $v(x) = \sec(\frac{\pi}{4}x - \frac{\pi}{4})\tan(\frac{\pi}{4}x - \frac{\pi}{4})$ whose graph is shown to the right.



(a) [3] (§5.5 #15) Find $\int v(x)\,dx$

(b) [1] (Indef Int Wks #3) If v was a velocity function set up the integrals necessary to find the *net* distance traveled from $t = -0$ to $t = 2$. You do *not* need to compute the number!!! Just set up the definite integral(s) that need to be solved.

(c) [2] (Indef Int Wks #3) If v was a velocity function set up the integrals necessary to find the *total* distance traveled from $t = 0$ to $t = 2$. You do *not* need to compute the number!!! Just set up the definite integral(s) that need to be solved.