

Calculus 1A
 October 25, 2004
 Jonathan Dorfman

Comments on Homework 7

(§3.11, #9) Many forgot to use chain rule when computing $f'(x)$. PLEASE take the effort to write:

$$\begin{aligned} f'(x) &= \left((1-x)^{\frac{1}{2}}\right)' \\ &= \frac{1}{2}(1-x)^{-\frac{1}{2}}(1-x)' \\ &= -\frac{1}{2}(1-x)^{-\frac{1}{2}} \end{aligned}$$

(§3.11, #25) Computing the $\sec(\pi/4)$ is most easily done by drawing a '45 – 45 – 90' triangle.

(§4.1, #13) Many gave invalid examples by sketching a graph with a vertical asymptote at one of the endpoints and not specifying any value at the endpoint. This is incorrect since the endpoints of $[-1, 2]$ are included in the domain and therefore the function must have a well defined value at $x = -1$ and $x = 2$.

(§4.1, #23) Many gave incorrect graphs of the function $(1/x)$ - it never touches the x -axis.

(§4.1, #43) The following steps must be taken after setting the derivative to 0:

$$\begin{aligned} f'(x) = 0 &\iff 2(-\sin x) + (2 \sin x \cos x) = 0 \\ &\iff 2 \sin x(-1 + \cos x) = 0 \\ &\iff \sin x = 0 \text{ or } \cos x = 1 \\ &\iff x = n \cdot \pi \text{ or } x = 2n \cdot \pi \quad (n \in \mathbb{Z}) \\ &\iff x = n \cdot \pi \quad (n \in \mathbb{Z}) \end{aligned}$$