

June 12, 2008

CAVEAT: This is a list of “mortal sins.” Mistakes on the order of those below will net you severe penalties. *Everything on this page is false; that is, none of the equalities below hold.*

1. Freshman’s theorem:  $(x + y)^n = x^n + y^n$
2. Writing mixed numbers as answers; i.e.,  $5\frac{1}{2}$
3. Writing  $\frac{0}{0} = \text{anything}$  or  $\frac{0}{0} \neq \text{anything}$
4. Treating  $\infty$  as a number; e.g., “putting it in for  $x$ ” when trying to compute a limit
5. Using the fake product rule:

“For two differentiable functions  $f$  and  $g$ ,  $\frac{d}{dx}(f \cdot g) = \frac{df}{dx} \cdot \frac{dg}{dx}$ ,”