

Physics 261: Math Practice Problems (part of hwk #2)

Here are some functions. Find their derivatives.

1. $\frac{e^x}{1+e^x}$

2. a^{x^2}

3. $\arccos x$

Here are some more functions. Sketch them, noting features such as zeroes, divergences, and the behavior for $x \rightarrow \pm\infty$.

1. $f(x) = \tanh x$

2. $f(x) = (x^2 - 1)e^{-x}$

3. $f(x) = (\sin x)e^{-x}$

4. $f(x) = (x + 3)/(x - 1)$