

# Math 248 - HW 5

24. For large negative values of  $x$ ,  $\sinh^{-1}(x) = \ln(x + \sqrt{x^2 + 1})$  can cause precision loss due to catastrophic cancellation.

Better alternative:  $\sinh^{-1}(x) = -\ln(\sqrt{x^2 + 1} - x)$   
 $\sqrt{x^2 + 1} - x$  is not close to 0 (unlike the original)