

## Problem 2: Hyperbolic Functions:

Sinh and Cosh are both mutually recursive functions. However, Sinh is called recursively in both functions, whereas Cosh is only called recursively in Sinh's implementation.

We should expect to see Sinh being called more than Cosh, and this finding agrees w/ our results. Moreover, as the angle gets smaller and moves towards 0, we should expect to see both functions being called less. This is because our angles reach the base conditions faster.

The recursive implementations cut the angle in half until this angle  $< |tol|$ . We continue recursively calling our functions on these smaller angles.

The smaller our angle is, the sooner it hits the base condition and our execution finishes. Thus, it agrees w/ our results to see both functions being called less. However, Sinh should still remain above unless the angle is small enough to where both functions arrive at the base condition at the same time.

\* we kept count using stacks to model the behavior of a recursion stack.