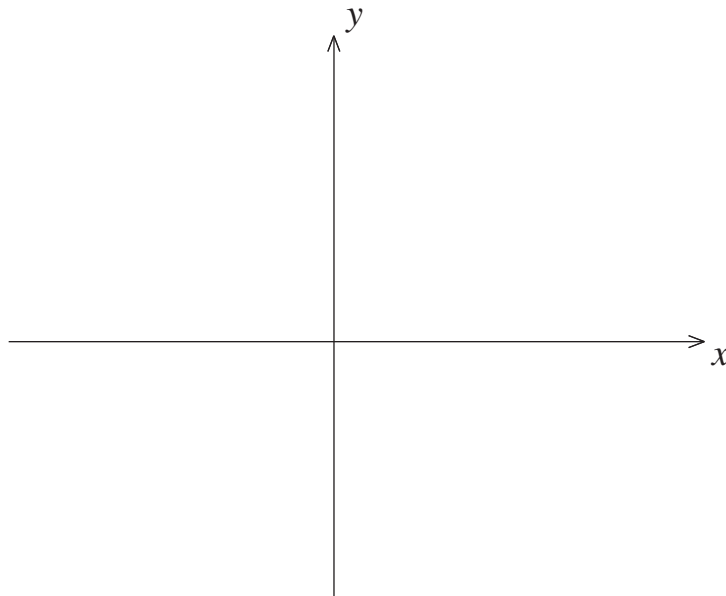
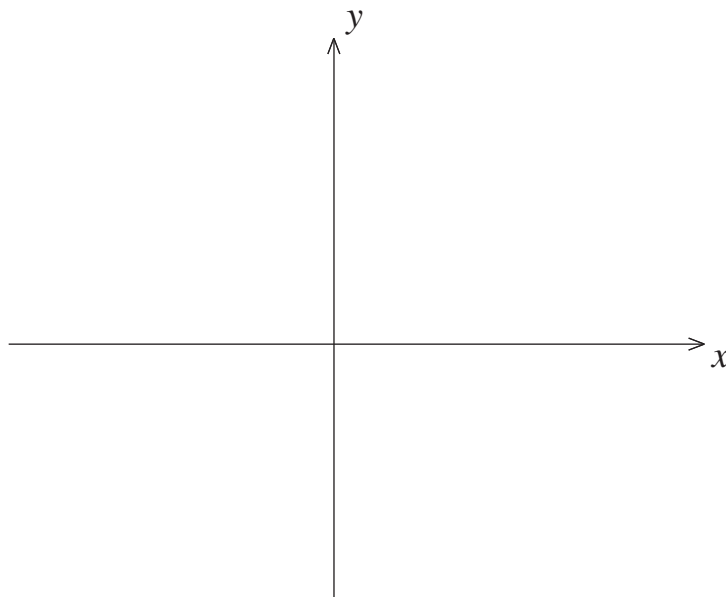


Quiz**Name**

Let $f(x) = \cosh x$. Provide a quick sketch of its graph by appealing only to the definition of the function and the graphs of e^x and e^{-x} . Make use of the fact that the graph lies above the line $y = x$ as well as symmetry.



1. Consider the inverse function $f^{-1}(x) = \cosh^{-1} x$. Why does the definition of the inverse require the restriction of the domain of $f(x)$ to $x \geq 0$? Add the graph of the inverse to the graph of $f(x) = \cosh x$.



2. Use the fact that $f'(x) = \sinh x$ and the fact that $\cosh^2 x - \sinh^2 x = 1$ to determine an explicit expression for $\frac{d}{dx} \cosh^{-1} x$.

3. Let $f(x) = \sinh(\ln x)$. Compute $f'(2)$.