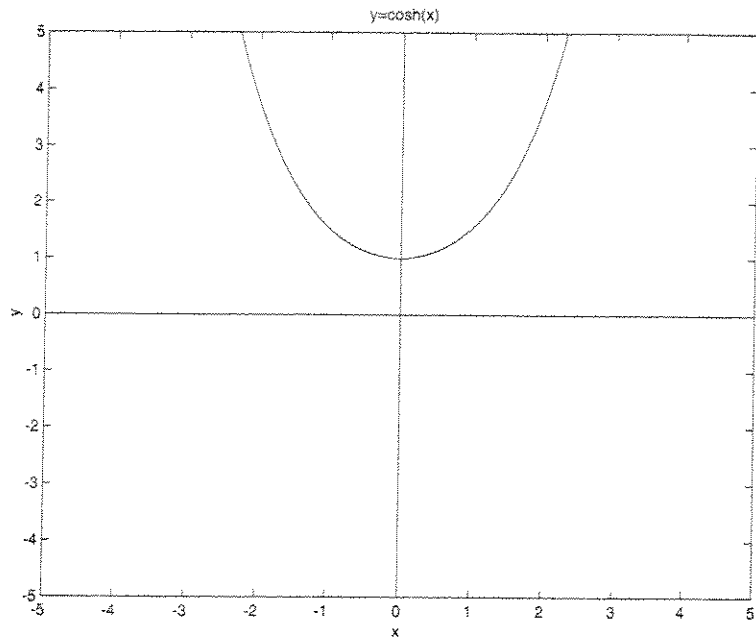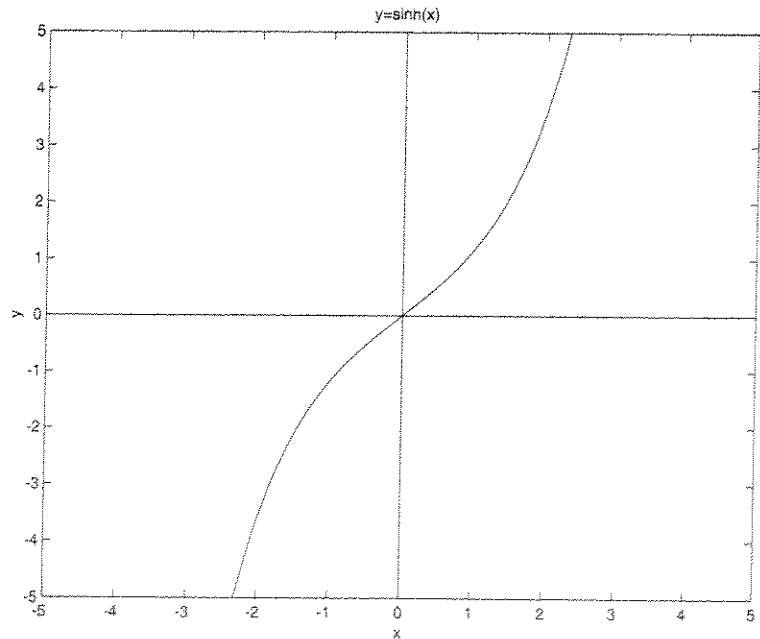# Review of Hyperbolic Trigonometric Functions

hyperbolic cosine function

$$y = \cosh x = \frac{e^x + e^{-x}}{2}$$

hyperbolic sine function

$$y = \sinh x = \frac{e^x - e^{-x}}{2}$$

basic facts

$$\frac{d}{dx}(\cosh x) = \sinh x$$

$$\frac{d}{dx}(\sinh x) = \cosh x$$

$$\cosh 0 = 1 \qquad \sinh 0 = 0$$

$$\cosh^2 x - \sinh^2 x = 1$$