## Trigonometric Functions

**13.** $\dfrac{d}{dx}(\sin x) = \cos x$

**14.** $\dfrac{d}{dx}(\cos x) = -\sin x$

**15.** $\dfrac{d}{dx}(\tan x) = \sec^2 x$

**16.** $\dfrac{d}{dx}(\csc x) = -\csc x \cot x$

**17.** $\dfrac{d}{dx}(\sec x) = \sec x \tan x$

**18.** $\dfrac{d}{dx}(\cot x) = -\csc^2 x$

## Inverse Trigonometric Functions

**19.** $\dfrac{d}{dx}(\sin^{-1} x) = \dfrac{1}{\sqrt{1-x^2}}$

**20.** $\dfrac{d}{dx}(\cos^{-1} x) = -\dfrac{1}{\sqrt{1-x^2}}$

**21.** $\dfrac{d}{dx}(\tan^{-1} x) = \dfrac{1}{1+x^2}$

**22.** $\dfrac{d}{dx}(\csc^{-1} x) = -\dfrac{1}{x\sqrt{x^2-1}}$

**23.** $\dfrac{d}{dx}(\sec^{-1} x) = \dfrac{1}{x\sqrt{x^2-1}}$

**24.** $\dfrac{d}{dx}(\cot^{-1} x) = -\dfrac{1}{1+x^2}$

## Hyperbolic Functions

**25.** $\dfrac{d}{dx}(\sinh x) = \cosh x$

**26.** $\dfrac{d}{dx}(\cosh x) = \sinh x$

**27.** $\dfrac{d}{dx}(\tanh x) = \operatorname{sech}^2 x$

**28.** $\dfrac{d}{dx}(\operatorname{csch} x) = -\operatorname{csch} x \coth x$

**29.** $\dfrac{d}{dx}(\operatorname{sech} x) = -\operatorname{sech} x \tanh x$

**30.** $\dfrac{d}{dx}(\coth x) = -\operatorname{csch}^2 x$

## Inverse Hyperbolic Functions

**31.** $\dfrac{d}{dx}(\sinh^{-1} x) \doteq \dfrac{1}{\sqrt{1+x^2}}$

**32.** $\dfrac{d}{dx}(\cosh^{-1} x) = \dfrac{1}{\sqrt{x^2-1}}$

**33.** $\dfrac{d}{dx}(\tanh^{-1} x) = \dfrac{1}{1-x^2}$

**34.** $\dfrac{d}{dx}(\operatorname{csch}^{-1} x) = -\dfrac{1}{|x|\sqrt{x^2+1}}$

**35.** $\dfrac{d}{dx}(\operatorname{sech}^{-1} x) = -\dfrac{1}{x\sqrt{1-x^2}}$

**36.** $\dfrac{d}{dx}(\coth^{-1} x) = \dfrac{1}{1-x^2}$