

HYPERBOLIC IDENTITIES

$$\cosh x = (e^x + e^{-x}) \qquad \sinh x = (e^x - e^{-x}) / 2$$

$$\tanh x = \sinh x / \cosh x$$

$$\operatorname{sech} x = 1 / \cosh x \qquad \operatorname{cosech} x = 1 / \sinh x$$

$$\operatorname{coth} x = \cosh x / \sinh x = 1 / \tanh x$$

$$\cosh ix = \cos x \qquad \sinh ix = i \sin x$$

$$\cos ix = \cosh x \qquad \sin ix = i \sinh x$$

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

$$\operatorname{sech}^2 A = 1 - \tanh^2 A$$

$$\operatorname{cosech}^2 A = \operatorname{coth}^2 A - 1$$