Mathematical equations of hyperbolic functions

See: ***Handbook of mathematical functions, NBS, USA, Sec. 4.5***

$$F_{abu}(x/a) = \tanh(x/a) = \frac{e^{x/a} - e^{-x/a}}{e^{x/a} + e^{-x/a}} = \frac{u(x/a)}{v(x/a)} \quad [1u]$$

$$F'_{abu}(x/a) = \frac{u'(x/a)\, v(x/a) - u(x/a)\, v'(x/a)}{v^2(x/a)} \quad [2u]$$

$$F'_{abu}(x/a) = \frac{v^2(x/a) - u^2(x/a)}{a\, v^2(x/a)} \quad [3u]$$

$$F'_{abu}(x/a) = \frac{4}{a\,[e^{x/a} + e^{-x/a}]^2} = \frac{1}{a\,\cosh^2(x/a)} \quad [4u]$$

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