Mathematical equations of hyperbel functions

See: ***Papula, L., (2003), Mathematische Formelsammlung, Vieweg***

$$F_{1b}(x) = \mathrm{b}\tanh(x) = \mathrm{b}\frac{e^{x}-e^{-x}}{e^{x}+e^{-x}} = \mathrm{b}\frac{u(x)}{v(x)} \qquad [1]$$

$$F'_{1b}(x) = \mathrm{b}\frac{u'(x)\,v(x) - u(x)\,v'(x)}{v^{2}(x)} \qquad [2]$$

$$F'_{1b}(x) = \mathrm{b}\frac{v^{2}(x) - u^{2}(x)}{\mathrm{a}\,v^{2}(x)} \qquad [3]$$

$$F'_{1b}(x) = \frac{4\mathrm{b}}{[e^{x}+e^{-x}]^{2}} = \frac{\mathrm{b}}{\cosh^{2}(x)} \qquad [4]$$