# CH - Hyperbolic functions

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| **Derive arcsinh x** | We take the positive log at the end. |
| **Derive arccosh x** | We must restrict y ≥ 0 for a one-to-one mapping.    We take the solution with the positive as we said y ≥ 0 so ey ≥ 1 for all y, and since x - \sqrt(x2 - 1) fails to exceed this for some x (eg, -1), we discard it. |
| **Derive arctanh x** |  |
| *Most of the graph work you can figure out using your calculator.* | |