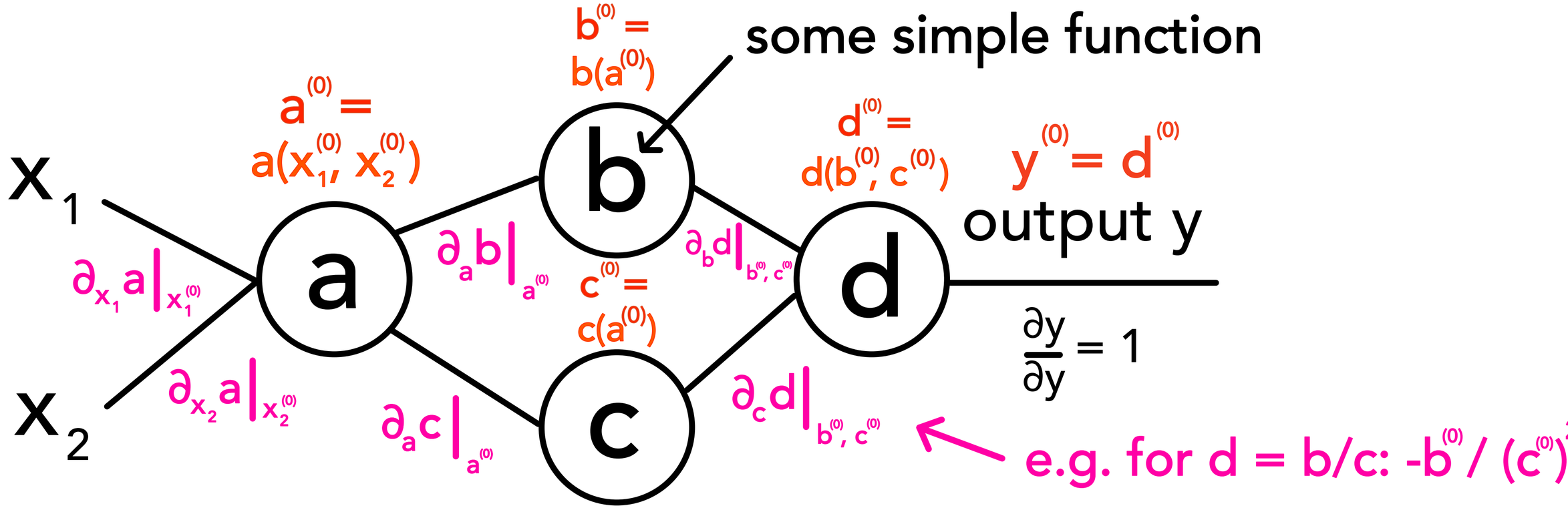
Aim: calculate $\partial_{x_1} f$ and $\partial_{x_2} f$ at some $\underline{x}^{(0)}$



1. at the given $\underline{x}^{(0)}$, calculate f and the values of a,b,c,d ← forward pass

2. with the calculated values, calculate the derivatives of the nodes w.r.t. their inputs

3. From right to left you can just see the chain rule, so ← backprop.

$$\partial_{x_1} d\overset{=y}{\Big|}_{x_1^{(0)}} = \partial_{x_1} a\Big|_{x_1^{(0)}} \left(\partial_a c\Big|_{a^{(0)}} \partial_c d\Big|_{b^{(0)}, c^{(0)}} + \partial_a b\Big|_{a^{(0)}} \partial_b d\Big|_{b^{(0)}, c^{(0)}} \right)$$

$$\partial_{x_2} d\Big|_{x_2^{(0)}} = \partial_{x_2} a\Big|_{x_2^{(0)}} \qquad = \| =$$