

This last (top-most) node represents
the probability of survival

You will often see these nodes
labeled as **z** for outputs.
We are using **x** to simplify the math
later in the document.

$$x_1^{(3)} = \sigma \left(s_1^{(3)} \right) = \frac{1}{1 + e^{-s_1^{(3)}}}$$

$$s_1^{(3)} = \sum_{j=1}^2 w_{1,j}^{(2)} x_j^{(2)}$$

You will often see these nodes
labeled as **h** for hidden units.
We are using **x** to simplify the math
later in the document.

$$x_1^{(2)} = \sigma \left(s_1^{(2)} \right) = \frac{1}{1 + e^{-s_1^{(2)}}}$$

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$$s_1^{(2)} = \sum_{j=1}^3 w_{1,j}^{(1)} x_j^{(1)}$$

$$s_2^{(2)} = \sum_{j=1}^3 w_{2,j}^{(1)} x_j^{(1)}$$

