



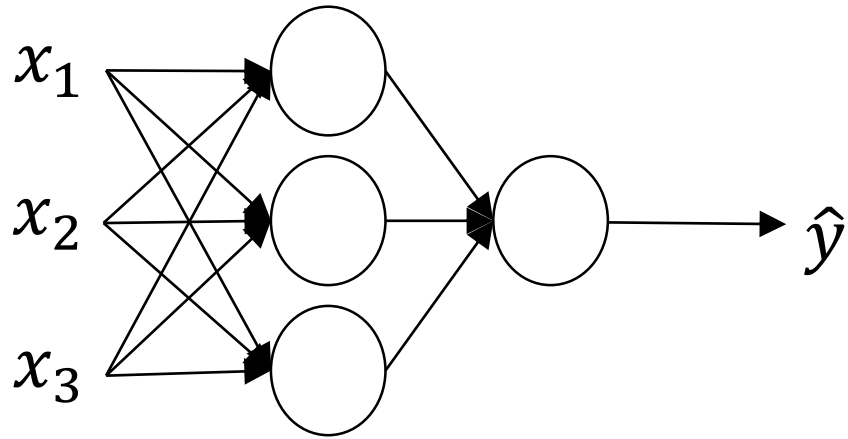
deeplearning.ai

# One hidden layer Neural Network

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## Activation functions

# Activation functions



Given  $x$ :

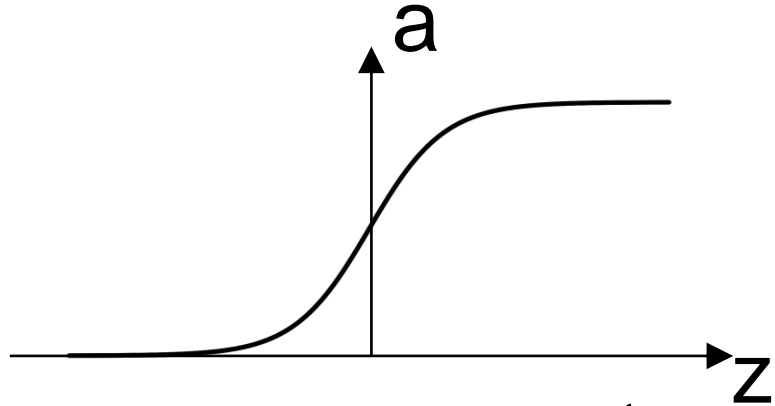
$$z^{[1]} = W^{[1]}x + b^{[1]}$$

$$a^{[1]} = \sigma(z^{[1]})$$

$$z^{[2]} = W^{[2]}a^{[1]} + b^{[2]}$$

$$a^{[2]} = \sigma(z^{[2]})$$

# Pros and cons of activation functions



sigmoid:  $a = \frac{1}{1 + e^{-z}}$

