

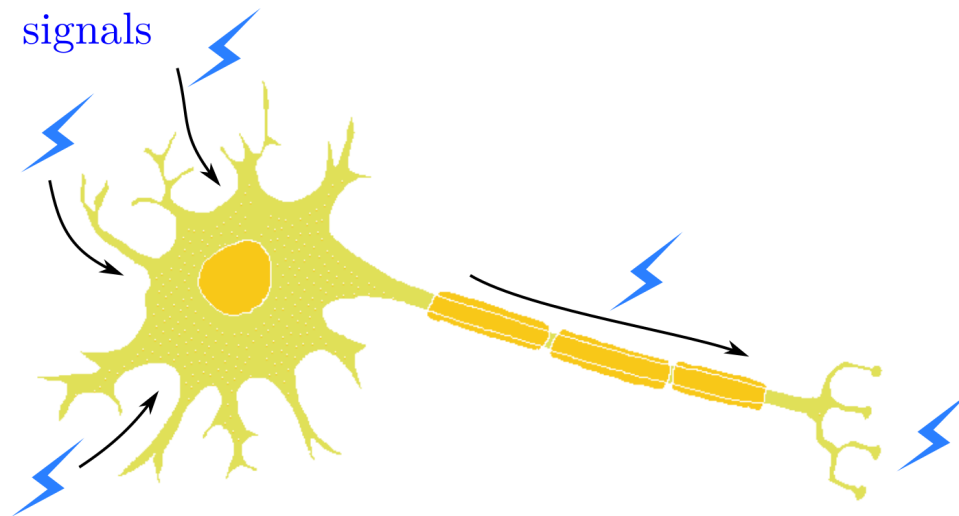
# AGI for dummies: 1

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## The biological neuron

Electrical signals are collected by dendrites where they are **summed up** around the cell body. If the sum total of electrical signals is greater than a certain fixed **threshold**, the neuron fires a new electric impulse at its output:



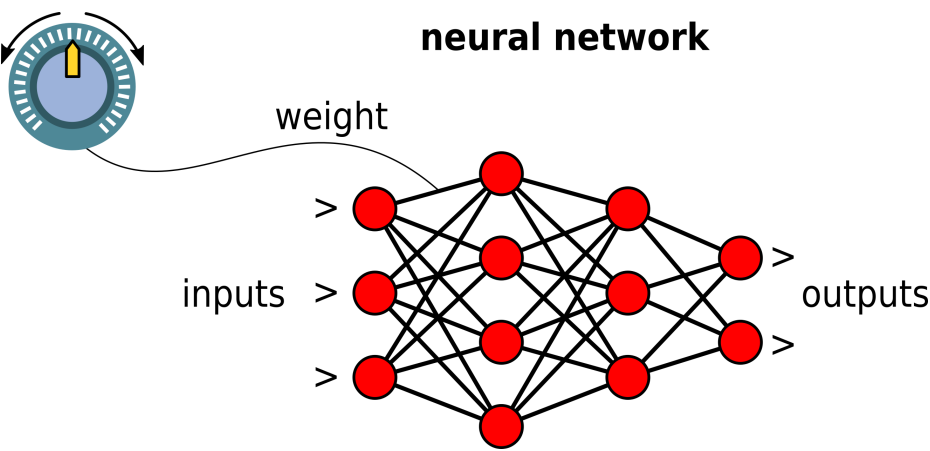
Human cells are very simple “machines”. They cannot perform highly complex computations. Each neuron performs only this simple operation, and together they achieve the powerful cognitive abilities of the brain.

## The mathematical neuron

Mathematically, a neuron is represented by this formula:

$$\boxed{\text{output}} \quad y = \mathcal{O} \left( \sum_1 W \cdot x \right) \quad \boxed{\text{input}} \quad (2)$$

# The neural network



(3)

## Calculus

## Vector and matrix