**Step 1: Inputs and Weighted Sums for Hidden Layer**

The inputs are:

* I1=10 (Blood Pressure)
* I2=30 (BMI)

Using these inputs and the weights, we calculate the weighted sums for each hidden layer neuron.

**Hidden Neuron H11 ​:**

Weighted Sum=(10×−0.6)+(30×0.1)=−6+3=−3

Applying the ReLU activation:

H11=ReLU(−3)=max⁡(−3,0)=0

**Hidden Neuron H12:**

Weighted Sum=(10×0.1)+(30×0.1)=1+3=4

Applying the ReLU activation:

H12=ReLU(4)=max⁡(4,0)=4

**Hidden Neuron H21​:**

ReLU(0+3.2)=3.2

**Hidden Neuron H22​:**

ReLU(0+0.8)=0.8

**Step 2: Output Layer Weighted Sum**

Now we calculate the weighted sum for the output layer neuron, using the results from the hidden layer neurons.

**Output Neuron O1​:**

O1​=σ(H21​×(−0.5)+H22​×0.5)=σ(3.2×(−0.5)+0.8×0.5) =σ(−1.6+0.4)=σ(−1.2)

**Step 3: Apply Sigmoid Activation to Output Neuron**

From the table provided in the image:

* For X=−1.2, we can approximate the Sigmoid value between −0.2and −0.1, which lies closer to 0.45 (as a rough approximation).

Thus, O1≈0.45

**Step 4: Final Prediction**

**I**n binary classification, a common threshold is 0.45 to decide between two classes:

* If the output ≥0.5, predict Heart\_Attack (1).
* If the output <0.5, predict No\_Heart\_Attack (0).

Since our output is exactly 0.5, we interpret it as Heart\_Attack (0).