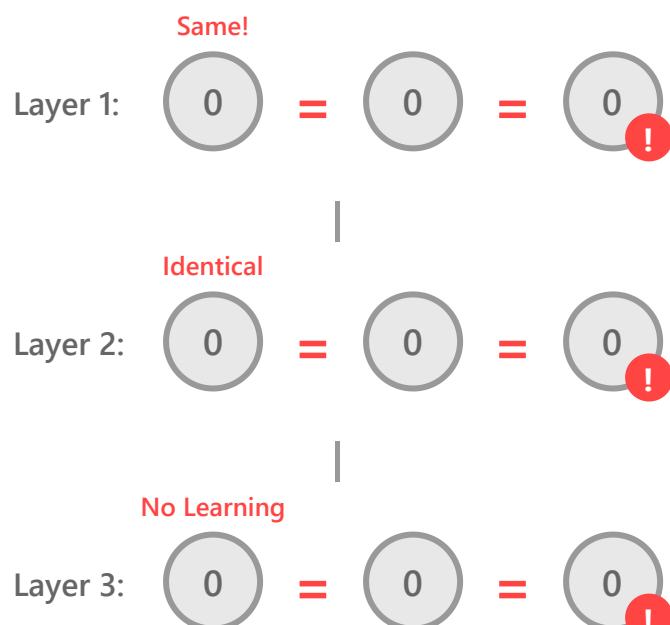


Problems with Zero Initialization



- 1 Symmetry problem: All neurons compute identical outputs
- 2 Gradients are identical for all neurons in same layer
- 3 Network fails to break symmetry during backpropagation
- 4 Results in redundant neurons learning same features
- 5 No learning occurs - weights remain constant
- 6 Effectively reduces network to single neuron per layer