Problem Explanation: The goal in this problem is to use the Hebbian rule to distinguish the letter O from the letter X. The Hebbian rule is one of the simplest learning rules in neural networks, which uses a simple yet interesting idea to adjust neuron weights. In summary, the Hebbian rule can be explained as follows:

The Hebb learning rule assumes that if two neighboring neurons are activated and deactivated at the same time, then the weight connecting these neurons should increase. For neurons operating in the opposite phase, the weight between them should decrease. If there is no signal correlation, the weight should not change.