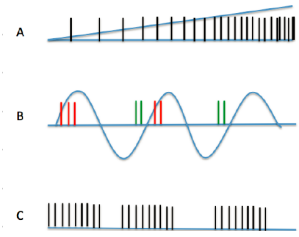
QUIZ - 2

Name: _____

Net-ID: _____

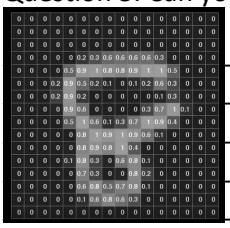
Never do this → 

Question 1: Briefly describe the **first two** ways that neurons use to encode information shown. (10%)



Question 2: What is a "simple cell" in the visual cortex and how we could combine them to detect complex stimuli? (5%+10%)

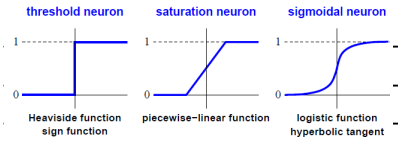
Question 3: Can you briefly describe two ways of encoding the picture below, using neurons? (10+10%)



Question 4: Can you name three different models of a neuron (e.g., H-H, …)? Can you categorize them with respect to computational efficiency and biological plausibility? (10+10%)

Question 5: Name at least 4 features of movement that a neuron in the motor cortex may encode (e.g., speed). (15%)

Question 6: If what you see below is the mapping function of the 1st and 2nd generation Neural Networks, could you comment on the mapping functions between neural input and output for a spiking neural network? (20%)



Question 7 [**Bonus**]: Can you name three different methods to introduce learning into Spiking Neural Networks? Why backpropagation does not work here? (10+5%)

GOOD LUCK!