NMJ Lab Questions

There are going to be 4 total hypotheses for this lab. One hypothesis for each number (1, 2, 3, and 4).

1. Why are the synaptic currents considerably shorter and have a different shape than the synaptic conductances?

2. What does that value of the asymptote that the EPP reaches correspond to?
   - This question refers to the horizontal asymptote or the y-value that membrane potential will not surpass.

3. Draw the “Patch with Passive Membrane” plot generated during the “Determine the reversal potential of the ACh-gated EPP” experiment. What is the value of the reversal potential? (You do not have to answer this form of the question, but if you already have it is acceptable. However, highlighted below is a better question to answer.)
   - The basis of this part of the experiment is that you are bringing membrane potential ($V_m$) to various steady states then having the membrane undergo an EPP. Hint: this part of the experiment relates to the equation ($V_m - E_{reversal}$) = IR
   - The question you should be answer is as follows: Based on the experimental method, how can you use the voltage vs time graphs to identify the value of the reversal potential?
   - In your figure caption, you should say what the reversal potential is based on your graph
   - In your discussion, talk about whether your method allowed you to find the correct reversal potential

4. Draw a plot that shows the differences between the passive and active voltage responses in the postsynaptic cell. Explain why the two plots are different.
   - Do not draw anything in your hypothesis, just make a hypothesis
To simplify, the question you should be answering is as follows: What differences do you expect when you stimulate a membrane without HH/voltage-gated channels (passive) vs a membrane with HH/voltage-gated channels (active)?