

1) A police detective is charged to investigate a crime. Based on the evidences, he initially suspects the butler. He needs to decide whether to hold or release the butler. Based on a statistical context, define for this problem: null hypothesis, alternative hypothesis and type I and II errors.

2) Choose a sensory system (auditory, gustatory, olfactory, somesthetic, visual) and comment on:

2.1) type of receptors and the process of transduction and neural pathways to reach specific cortical areas

2.2) Discuss the concepts "sensation" and "perception"

3) Explain how synapses work.

4) Maria is a researcher who is interested in ways to improve the memory of high school students. Maria wants to investigate whether the use of mnemonic techniques is an effective way to improve memory. She intends to conduct her research using the tenth-year high school students. There are 20 students in the class. Design an investigation that Maria could use to reach her research goal. Your response should include:

3.1) variables to be tested and their empirical / operational definition

3.2) a research hypothesis to be tested

3.3) ethical considerations