1:A psychologist at a university wants to know if subjects with normal vision can be fooled by a certain optical illusion. She included all students with normal vision from BMS 2021 class and found that 31 of them were fooled by the illusion. (Using following number to answer all questions in this series: US population 332.7 million as of September 2021, world: 7.789 billion as of September 2021, University students: 3,600, all students at MU-COM: 720, BMS 2021 Class: 50)

* If we assume 70% of population have normal vision across the board, what was the psychologist’s sample? \_\_ (Rounding to the nearest whole number)

2: A psychologist at a university wants to know if subjects with normal vision can be fooled by a certain optical illusion. She included all students with normal vision from BMS 2021 class and found that 31 of them were fooled by the illusion. (Using following number to answer all questions in this series: US population 332.7 million as of September 2021, world: 7.789 billion as of September 2021, University students: 3,600, all students at MU-COM: 720, BMS 2021 Class: 50)

If we assume 70% of population have normal vision across the board, what was the implied population of interest for this study? \_\_ (Rounding to the nearest whole number)

3: A psychologist at a university wants to know if subjects with normal vision can be fooled by a certain optical illusion. She included all students with normal vision from BMS 2021 class and found that 31 of them were fooled by the illusion. (Using following number to answer all questions in this series: US population 332.7 million as of September 2021, world: 7.789 billion as of September 2021, University students: 3,600, all students at MU-COM: 720, BMS 2021 Class: 50)

Describe at least one possible bias in the study design, and briefly demonstrate how you will address that. (Short essay question)

4: In a clinical trial of a new anti-fungus treatment, 100 subjects were randomly assigned to either a placebo or the new treatment. The number of factors in this experiment is \_\_.

5: n a clinical trial of a new anti-fungus treatment, 100 subjects were randomly assigned to either a placebo or the new treatment. In addition, two doses of treatment (100 mg vs. 200 mg) were compared with the placebo.  The number of factors in this experiment is \_\_.

6: n a clinical trial of a new anti-fungus treatment, 100 subjects were randomly assigned to either a placebo or the new treatment. In addition, two doses of treatment (100 mg vs. 200 mg) were compared with the placebo. The method of delivery of the drug (oral, intraperitoneal inoculation, or intravenous injection) was also considered. How many treatment groups are there in this experiment? \_\_.