

Week 2 — Study design, bias, and causality: Wednesday exit ticket

Week 2 – Wednesday exit ticket

Name: _____

Date: _____

Instructions

Work through each item below. Write your final response in the space provided. Show enough work that another reader can follow your reasoning.

1. Recall the study from Week 1 on air pollution and preterm births in Southern California. Researchers worked with hospital records for 143,196 births that took place between 1989 and 1993, and computed each pregnancy's average exposure to several pollutants (carbon monoxide, nitrogen dioxide, ozone, particulate matter PM10). Their analysis suggested that higher PM10 exposure was associated with a greater chance of preterm birth.
 - (a) Identify the population of interest and the sample in this study.
 - (b) Can the findings of the study, by themselves, establish a causal relationship between PM10 exposure and preterm birth? In one or two sentences, explain why or why not.

2. Recall the study from Week 1 on honesty and self-control in children. Researchers worked with 160 children between the ages of 5 and 15. Each child was asked to toss a fair coin in private and to record the outcome (white or black) on a slip of paper. The researchers said they would only reward children who reported white. Half of the children were also explicitly told not to cheat; the other half were given no instructions about cheating.
 - (a) Identify the population of interest and the sample in this study.
 - (b) Comment on whether the results of the study can be generalized to the population of interest. (One or two sentences.)
 - (c) Can the findings of the study be used to establish causal relationships between the explicit instruction not to cheat and the observed cheating behavior? Explain in one or two sentences.

