Worksheet 2 - confounding

Monday, January 26, 2026

Math 58B - Jo Hardin

Name: _____

Names of people you worked with: _____

Which aspect of Math 58B are you most excited about? Which aspect seems most daunting?

Task: For each of the following research questions identify the following:

a. The explanatory variable.
b. The response variable.
c. A potential confounding variable.

1. Are there effects of second-hand smoke on the health of children?
2. Do people tend to spend more money in stores located next to food outlets with pleasing smells?
3. Does cell phone use increase the rate of automobile accidents?

Solution:

1. Are there effects of second-hand smoke on the health of children?

    a. explanatory: amount of second-hand smoke
    b. response: some health metric
    c. confounding: if parents smoke, maybe there are other home variables which are associated with poor health (low exercise, processed food, etc.)

2. Do people tend to spend more money in stores located next to food outlets with pleasing smells?

    a. explanatory: whether or not the store is located to a food outlet with a pleasing smell
    b. response: amount of money spent
    c. confounding: the type of mall where the stores are located

3. Does cell phone use increase the rate of automobile accidents?

    a. explanatory: cell phone use / not
    b. response: automobile accident / not
    c. confounding: other distractions in the car (kids, music, etc.)