GER1000 2018 Sem 2
Quiz 1 and solutions

1. According to the Module Description in the IVLE, the Quizzes contribute __% to the final grade of GER1000.

(A)   5
(B) 10
(C) 15
(D) 20
(E) 25

2. Refer to Slide 7 of Unit 4 "Randomised Assignment". In comparing the polio rates of treatment and control groups, confounding is minimised because

(i) Eligible children were randomly assigned to treatment and control.
(ii) Only children with parental consent participated in the experiment.

Which of the statements is/are true?

(A) Both (i) and (ii)
(B) (i) only
(C) (ii) only
(D) Neither (i) nor (ii)

Consent is used only to determine eligibility (see Unit 3 Slide 11), and has nothing to do with confounding. (i) is true; see Unit 4.

3. Refer to Slide 5 of Unit 3 "The NFIP Study". Ignore the last row, the one with "Y2 no consent". Among the children in the first two rows (treatment and control), there is ____ association between treatment and polio.

(A) a positive
(B) no
(C) a negative
(D) More information is needed.

Since rate(polio | treatment) < rate(polio | control), the answer follows from the definition of negative association in Unit 6 Slide 14.

4. The website correlated.org presents the following for December 24th 2018. 352 people are surveyed, of whom 131 find the sound of windshield wipers to be soothing. Among the 352 people, 55% stay in the movie theater until the credits end. But among those who find the sound of windshield wipers to be soothing, 75% stay in the movie theater until the credits end. Among those who do not find the sound of windshield wipers to be soothing, the percentage who stay in the movie theater until the credits end is

(A) more than 75%
(B) equal to 75%
(C) more than 55% and less than 75%
(D) equal to 55%
(E) less than 55%

55% is the overall rate, 75% is the rate in the group who find the sound of windshield wipers soothing. By the Basic Rule on Rates in Unit 8, 55% must be between 75% and the rate in the other group, which must be less than 55%.

5. Let A and B be population characteristics.

(i) rate(A | B) and rate(B | A) always have the same value.
(ii) rate(A | B) and rate(B | A) always have different values.

Which of the statements is/are true?

(A) Both (i) and (ii)
(B) (i) only
(C) (ii) only
(D) Neither (i) nor (ii)

The two rates can be equal or different, depending on the situation. See Unit 6 Slides 10 and 12. In Slide 12, if we replace 170 by 12 in the second row, so that the row total becomes 22, then rate(poverty | high) becomes equal to rate(high | poverty).

6. Refer to Unit 6 Slide 12. From the table, rate(poverty | high) = 10/180 x 100% ≈ 6%, rate(adequacy | high) = 170/180 x 100% ≈ 94%. **Since rate(poverty | high) < rate(adequacy | high), this shows an association between poverty and high IQ.** The statement in bold is

(A) true
(B) false

An association between poverty and high IQ means rate(poverty | high) and rate(poverty | low) are different, or rate(high | poverty) and rate(high | adequacy) are different. See Unit 6 Slide 16. It can be that, for example, rate(poverty | high) = rate(poverty | low), i.e., no association, and yet rate(poverty | high) < rate(adequacy | high).