

GER1000 QUANTITATIVE REASONING

Quiz 6 with solutions

Question 1

In Study 1 of Unit 1 within Chapter 5, the sample risk ratio is approximately the same as the population risk ratio. In Study 2, the sample risk ratio is _____ the population risk ratio.

- (A) Significantly less than
- (B) Approximately equal to
- (C) Significantly greater than

Answer: (A). Refer to slide 9, sample risk ratio is 1.16 while population risk ratio is 1.33.

Objective: Population RR cannot be accurately estimated from a sample in a case-control study.

Question 2

In Study 1 of Unit 2 within Chapter 5, the sample odds ratio is _____ the population odds ratio.

- (A) Significantly less than
- (B) Approximately equal to
- (C) Significantly greater than

Answer: (B). Refer to slide 18, population risk ratio is 1.50 while from slide 20, the sample risk ratio is 1.57.

Objective: Population OR can be accurately estimated from a sample in a cohort study.

Question 3

In a population, let RR be the risk ratio of being autistic between males and females, and let OR be the odds ratio of being autistic between males and females. Which of the following is/are true?

- (I) If OR is 1, then RR must also be 1.
 - (II) If OR is greater than 1, RR can be less than 1.
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- (A) Both (I) and (II).
 - (B) (I) only.
 - (C) (II) only.
 - (D) Neither (I) nor (II).

Answer: (B). If OR is 1, there is no association between sex and being autistic. Likewise, if there is no association between sex and being autistic, then RR must also be 1. Slide 19 says that if $OR > 1$, then $RR > 1$.

Question 4

A college has 1500 male and 1500 female students taking a quantitative reasoning module in a particular semester. The following table depicts the distribution of sex (male vs. female) and grades (S vs. U) among these students.

	S (Satisfactory)	U (Unsatisfactory)	Row Total
Male			1500
Female			1500
Column Total			3000

Suppose that $\text{rate}(S|\text{Female})$ was 0.7, and the odds ratio for S grade between male students and female students was 0.375. What is the $\text{rate}(\text{Male}|S)$ to one decimal place?

- (A) 0.3
- (B) 0.4
- (C) 0.5
- (D) 0.6

Answer: (B).

	S (Satisfactory)	U (Unsatisfactory)	Row Total
Male	700	800	1500
Female	1050	450	1500
Column Total	1750	1250	3000

$\text{rate}(\text{Male}|S) = 700/1750 = 0.4$ (one decimal place)

Question 5

The odds ratio of lung cancer between smokers and non-smokers is equal to 2 in the adult population of Singapore. Which of the following is true in the adult population of Singapore?

- (A) The rate of smokers among people without lung cancer is greater than the rate of smokers among people with lung cancer.
- (B) The rate of smokers among people without lung cancer is equal to the rate of smokers among people with lung cancer.
- (C) The rate of smokers among people without lung cancer is less than the rate of smokers among people with lung cancer.

Answer: (C). Slide 19 says that if $OR > 1$, then $RR > 1$. Here the phrasing is a trick.