

## For Highly Educated Samples

### Adaptive Berlin Numeracy Test Format

Instructions: Please answer the questions that follow. Do not use a calculator but feel free to use the scratch paper for notes.

[See Figure 1 for adaptive test structure.]

1. Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? Please indicate the probability in percent.

\_\_\_\_\_ %

2a. Imagine we are throwing a five-sided die 50 times. On average, out of these 50 throws how many times would this five-sided die show an odd number (1, 3 or 5)?

\_\_\_\_\_ out of 50 throws.

2b. Imagine we are throwing a loaded die (6 sides). The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. On average, out of these 70 throws how many times would the die show the number 6?

\_\_\_\_\_ out of 70 throws.

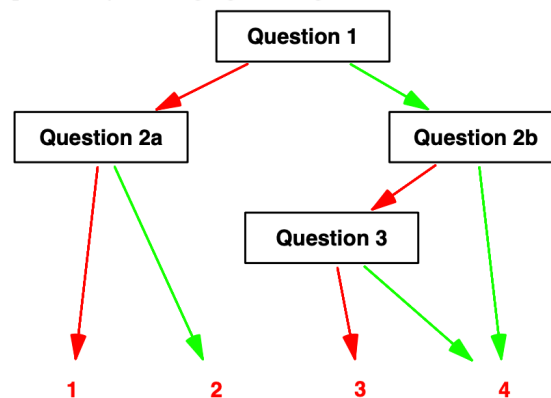
3. In a forest 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. What is the probability that a poisonous mushroom in the forest is red?

\_\_\_\_\_

Scoring = Based on answers to 2-3 questions following the adaptive structure.

Correct answers are as follows: 1 = 25; 2a = 30; 2b = 20; 4 = 50.

Figure 1: The structure of the Computer Adaptive Berlin Numeracy Test. Each question has a 50% probability of being right/wrong. If a question is answered right/wrong a harder/easier question is provided that again has a 50% probability of being right/wrong.



### Berlin Numeracy Test - Traditional Paper and Pencil Format

Instructions: Please answer the questions below. Do not use a calculator but feel free to use the space available for notes (i.e., scratch paper).

1. Imagine we are throwing a five-sided die 50 times. On average, out of these 50 throws how many times would this five-sided die show an odd number (1, 3 or 5)?  
\_\_\_\_\_ out of 50 throws.
2. Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? (please indicate the probability in percent).  
\_\_\_\_\_ %
3. Imagine we are throwing a loaded die (6 sides). The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. On average, out of these 70 throws, how many times would the die show the number 6?  
\_\_\_\_\_ out of 70 throws.
4. In a forest 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. What is the probability that a poisonous mushroom in the forest is red?  
\_\_\_\_\_ %

Scoring = Count total number of correct answers.

Correct answers are as follows: 1 = 30; 2 = 25; 3 = 20; 4=50.

#### Citations:

Cokely, E. T., Galesic, M., Schulz, E., Ghazal, S., & Garcia-Retamero, R. (2012). Measuring risk literacy: The Berlin numeracy test. *Judgment and Decision Making*, 7(1), 25.

## For National Samples or Less Educated Samples

### Add the following 3 Items (Schwartz et al., 1997) to your preferred version of the Berlin Numeracy Test

Instructions: Please answer the questions below. Do not use a calculator but feel free to use the space available for notes (i.e., scratch paper).

1. Imagine that we flip a fair coin 1,000 times. What is your best guess about how many times the coin would come up heads in 1,000 flips?  
\_\_\_\_\_ flips
2. In the BIG BUCKS LOTTERY, the chance of winning a \$10 prize is 1%. What is your best guess about how many people would win a \$10 prize if 1,000 people each buy a single ticket to BIG BUCKS?  
\_\_\_\_\_ people
3. In ACME PUBLISHING SWEEPSTAKES, the chance of winning a car is 1 in 1,000. What percent of tickets to ACME PUBLISHING SWEEPSTAKES win a car?  
\_\_\_\_\_ %

Scoring = Count total number of correct answers.

Correct answers are as follows: 1 = 500; 2 = 10; 3 = 0.1

#### Citation:

Schwartz, L. M., Woloshin, S., Black, W. C., & Welch, H. G. (1997). The role of numeracy in understanding the benefit of screening mammography. *Annals of internal medicine*, 127(11), 966-972.

**For use when have limited time**

**Berlin Numeracy Test Single Item (Median) Format**

Instructions: Please answer the questions below. Do not use a calculator but feel free to use the space available for notes (i.e., scratch paper).

1. Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? (please indicate the probability in percent).  
\_\_\_\_\_ %

Scoring = Count total number of correct answers.  
Correct answers are as follows: 1 = 25.

### Berlin Numeracy Test Multiple Choice Format

Instructions: Please answer the questions below. Do not use a calculator but feel free to use the space available for notes (i.e., scratch paper).

1. Imagine we are throwing a five-sided die 50 times. On average, out of these 50 throws how many times would this five-sided die show an odd number (1, 3 or 5)
  - a. 5 out of 50 throws
  - b. 25 out of 50 throws
  - c. 30 out of 50 throws
  - d. None of the above
2. Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? Please indicate the probability in percent
  - a. 10%
  - b. 25%
  - c. 40%
  - d. None of the above
3. Imagine we are throwing a loaded die (6 sides). The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. On average, out of these 70 throws, about how many times would the die show the number 6?
  - a. 20 out of 70 throws
  - b. 23 out of 70 throws
  - c. 35 out of 70throws
  - d. None of the above
4. In a forest 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. What is the probability that a poisonous mushroom in the forest is red?
  - a. 4%
  - b. 20 %
  - c. 50 %
  - d. None of the above