

19. TH.1 · Thinking, problem solving and intelligence

Starter Quiz ·

GRE Subject Test · GRE Psychology

Name: _____ Score: _____

1. A town has 20 librarians and 200 farmers. The description fits 80% of librarians and 10% of farmers. Probability someone who fits is a librarian (three decimal places)?

2. People prefer a treatment with “90% survival” over one with “10% mortality”. This is
 - ☐ availability
 - ☐ framing
 - ☐ confirmation bias
 - ☐ anchoring
3. Heuristics are errors by definition.
 - ☐ True ☐ False
4. Failing to see a matchbox as a possible shelf is functional _____.

5. Which statement about an algorithm is most defensible?
 - ☐ A heuristic is always an incorrect algorithm.
 - ☐ A correct algorithm followed properly solves the task for inputs within its specified conditions.
 - ☐ Any instruction sequence solves every possible problem.
6. In the worked example, 16 librarians and 16 farmers match a description. What is the denominator for the probability that a randomly selected matching person is a librarian?
 - ☐ The 20 librarians only
 - ☐ The 32 people who match
 - ☐ All 100 residents
7. Avoiding confirmation bias means automatically accepting every report that disagrees with you.
 - ☐ True ☐ False

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Answers ·

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1. **0.444**

Librarians who fit: $0.8 \times 20 = 16$. Farmers who fit: $0.1 \times 200 = 20$. $P(\text{librarian} \mid \text{fits}) = 16 / (16 + 20) \approx 0.444$. Ignoring the base rate of many more farmers leads people to overestimate it.

2. **framing**

Equivalent outcomes, different descriptions.

3. **False**

Heuristics are shortcuts that can be useful. They do not guarantee a correct solution, and a particular use may ignore relevant information.

4. **fixedness**

Objects stuck in their usual role.

5. **A correct algorithm followed properly solves the task for inputs within its specified conditions.**

The guarantee depends on correctness, proper execution and the stated problem/input conditions.

6. **The 32 people who match**

Conditioning on matching restricts the reference group to all matching people, from either occupation.

7. **False**

Seek potential refutation, but judge both supporting and conflicting evidence using comparable quality standards.