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(librarian | 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.