

Ethics in Mathematics Practice Quiz

- 1. What is the most important ethical consideration for technology?**
 - a. Mass production of smartphones
 - b. Improving battery life of devices
 - c. Increasing CPU speed
 - d. Data protection and security**

- 2. What ethical insights were highlighted in the '*Confronting Your Boss with Logic*' problem?**
 - a. Accessibility and inclusivity
 - b. Interpersonal integrity and responsibility**
 - c. Transparency and responsibility
 - d. Obedience and inclusivity

- 3. In the '*Confronting Your Boss with Logic*' problem, what does the sock analogy show?**
 - a. It shows that the probability of an event happening depends on how many people are willing to do it**
 - b. It shows that the event will happen regardless of the situation
 - c. It shows that the red sock will always be picked
 - d. None of the above

- 4. What is the fundamental assumption made when using Newton's law of cooling in the '*Ethics of Crime Scene Investigation*' problem?**
 - a. The rate of change in an object's temperature is proportional to its own temperature
 - b. The temperature of the object must be measured in Celsius
 - c. The temperature of the surrounding environment is constant**
 - d. The proportionality constant 'k' is dimensionless

- 5. What are the conclusions that can be drawn from the '*Ethics of Crime Scene Investigation*'? (Select all that apply)**
 - a. The use of mathematical modelling is always accurate
 - b. Ethical considerations are essential when modelling real-world events**
 - c. Mathematical models never require assumptions
 - d. Assumptions are not always accurate and can lead to ethical issues**

- 6. Why do mathematically trained professionals need to consider ethics in their work?**
 - a. Because their work has a significant impact on society**
 - b. Because only mathematicians face ethical challenges
 - c. Because non-mathematicians cannot understand the technical aspects
 - d. Because ethical considerations are more important than technical considerations

7. Which of these ethical issues were highlighted in the '*Mathematical Communication*' problem? (Select all that apply)

- a. Moral implications of participations
- b. Accessibility and inclusivity
- c. Transparency and responsibility
- d. Interpersonal integrity

8. According to the '*Mathematical communication*' problem, which of the following are effective ways to communicate with a non-technical audience about mathematical models? (Select all that apply)

- a. Simplifying mathematical terminology
- b. Clarifying concepts through visual aids
- c. Avoiding explaining mathematical concepts to a non-technical audience
- d. Adopting more inclusive means of communication

9. Why might a mathematician feel ethically conflicted about using Lanchester's model to model military engagements and warfare? (Select all that apply)

- a. Because it assumes that each army loses soldiers proportional to the strength of its opposing army
- b. Because its use directly impacts decisions that affect human lives
- c. Because it illustrates that the fighting strength of an army increases with the square of its soldiers
- d. Because its proportionality constants represent the killing rates of each army

10. Which of these constitutes the primary takeaway regarding ethics in mathematics?

- a. Ethics is only relevant in the social sciences, not mathematics
- b. Mathematics has no connection to ethics
- c. Ethical responsibilities arise when mathematical models have real world consequences
- d. The ethical aspects of mathematical models should be ignored