**Seven Principles of Software Testing**

The seven principles of software testing are fundamental guidelines that help testers conduct effective and efficient testing. Here they are:

1. **Testing Shows the Presence of Defects**

Testing can show that defects are present, but it cannot prove that there are no defects. [Even if no defects are found, it does not mean the software is defect-free1](https://www.guru99.com/software-testing-seven-principles.html).

**2. Exhaustive Testing is Impossible**

It is not feasible to test all possible combinations of inputs and scenarios. [Instead, risk-based and prioritized testing should be performed1](https://www.guru99.com/software-testing-seven-principles.html).

**3. Early Testing:**

Testing activities should start as early as possible in the software development lifecycle. [Early testing helps in identifying and fixing defects early, reducing the cost and effort required to fix them later1](https://www.guru99.com/software-testing-seven-principles.html).

**4. Defect Clustering**

* A small number of modules usually contain most of the defects. [This is often referred to as the Pareto Principle (80/20 rule), where 80% of the problems are found in 20% of the modules1](https://www.guru99.com/software-testing-seven-principles.html).

**5. Pesticide Paradox**

* **Explanation**: If the same tests are repeated over and over again, eventually these tests will no longer find new defects. [To overcome this, test cases need to be regularly reviewed and revised1](https://www.guru99.com/software-testing-seven-principles.html).

**6. Testing is Context Dependent**

Testing is done differently in different contexts. [For example, safety-critical software is tested differently from an e-commerce website1](https://www.guru99.com/software-testing-seven-principles.html).

**7. Absence-of-Errors Fallacy**

* Just because a software product is free of defects does not mean it is useful. [It must meet the usr’s needs and requirements](https://www.guru99.com/software-testing-seven-principles.html)