

1. [25 pts.] What were the two or three main contributing factors (the actual defect that was responsible for off nominal behavior) to the Ariane 5 accident?
 - a. Overflow + exception handling.
 - b. Process (think about software life cycle).
 - c. Testing

2. [25pts] What were the two or three main contributing factors (the actual defect that was responsible for off nominal behavior) to the MCO mishap?
 - a. Lack of system engineering function.
 - b. End-to-end testing to validate the software performance was not accomplished.
 - c. The software interface specification was not followed to make sure transferred data handling correctly.

3. [25pts] For the Ariane 5, was it a failure in the process that was the root cause or something else (please explain in about four sentences or less)?

The most correct answer is - A Process error, if the proper testing had been done the problems could have been discovered and corrected. Acceptable answers included the fact that the engineers had accepted the fact that the previous system had worked, so this could be looked at as a Design error or Specification error.

4. [25pts] For the MCO Mishap, was it a failure in the process that was the root cause or something else (please explain in about four sentences or less)?

The most correct answer is - A Process error, if proper testing, communications and training had been in place the errors could have been discovered and corrected. Acceptable answers include some combination of the correct answer.

5. [20 extra credit pts.] Explain the difference between a defect (or fault) and a failure?

Thinking about software life cycle, fault is that software performance is not proper according to spec, failure is that final performance(results) is not accepted. For software life cycle, we should decrease amounts of fault and finally avoid failure.