The Six-Step Procedure

1. Symptom recognition
2. Symptom elaboration
3. Listing of probable faulty functions
4. Localizing the faulty function
5. Localizing trouble to the circuit
6. Failure Analysis

Some details as follows (noting this was an entire 25 page chapter in the Basic Electronics manual).

1.   Symptom recognition: A trouble symptom is a sign or indicator of some disorder or malfunction.  Symptom recognition is the act of identifying such a sign when it appears. Categories of recognition include:
    A.   Knowing normal vs. abnormal performance
    B.   Performance evaluation
    C.   Knowing equipment failure vs. degraded performance
    D.   Knowing the equipment, including test equipment and associated documentation
2.   Symptom elaboration: Further defining the symptom using the equipment capability. Categories of elaboration include:
    A.   Use of operating controls
    B.   Precautions for specific equipment (do not operate incorrectly)
    C.   Verify correct control settings (e.g., the famous on/off switch is in the on position)
    D.   Aggravating the trouble symptom
    E.   Data recording
3.   Listing of probable faulty functions: mentally prioritize the most probable functions that could cause the symptom.  Categories include:
    A.   Selection logic, e.g., troubleshooting flow diagram
    B.   Functional block diagram
4.   Localizing the faulty function: testing to verify which probable faulty function is the actual faulty function.  This is the first time test equipment is used.  Categories include:
    A.   Test selection, e.g., test a function that can eliminate several functions as the possible faulty function (using test points if available)
    B.   Use of experience or equipment history (e.g., maintenance records)
    C.   Analyze test results
    D.   Trouble verification
5.   Localizing trouble to the circuit: find the faulty circuit within the function. Essentially this is similar to step 4, where instead of looking for a faulty function within a unit of multiple functions, you look for the faulty circuit within the function of multiple circuits. Categories include:
    A.   Detailed block diagrams
    B.   Bracketing, i.e., identifying properly performing circuits, e.g., correct outputs at test points
    C.   Trace signal paths

6.    Failure Analysis: finding the faulty component.  Essentially more detailed extension of steps 4 and 5.  Categories include:
   A.   Schematics
   B.   Circuit or component performance charts or specs
   C.   Failure cause, determining what caused the component to fail, e.g., over-current, voltage spike, operator error

Just a modern note to add.  When doing failure analysis for ICs, we actually have taken the failure cause step quite a bit further; one looks at symptom, mode, mechanism, and cause, where the mechanism and cause have to be examined at the microscopic level.  In the old days, one could often visually see the failure, so tracing the mechanism and cause were a lot simpler (also the components were significantly less reliable, e.g., 3-6 orders of magnitude lower MTTF).