# TEST 1

## Error conditions handled smoothly

In most cases tests should include confirmation that the macro handle invalid or error conditions smoothly, with a clear message to the user, and an appropriate return value to the calling program.

For example, given an invalid data set name, a macro should set the global macro variable CONTINUE to 0 (See [Project Programming Guidelines](http://www.phusewiki.org/wiki/index.php?title=WG5_P02_Programming_Guidelines) for further discussion).

## Checks

1. Missing required parameter – ALL return a NULL string
   1. Missing min
   2. Missing max
   3. Missing both min & max
2. Invalid parameter – ALL return a NULL string
   1. Min = Max (test various equivalent formats)
   2. Min > Max (test positive, negative and combinations)
   3. non-numeric min
   4. non-numeric max
   5. non-numeric ticks

# TEST 2

## Valid parameters produce reasonable tick intervals

Test valid numeric values of Min, Max, and Ticks. Ticks must be a positive integer. If the macro receives an invalid but numeric value for TICKS, it should adjust the TICKS value and return a valid axis order string.

## Checks

1. Positive min & max (test various real numbers)
2. Non-positive min & positive max
3. Negative min & non-positive max
4. Non-positive, non-integer value of TICKS: Macro corrects & returns valid string
5. Range of positive integer values for TICKS

# TEST 3

## Confirm expected log messages

In most cases tests will include failure scenarios, which should produce log messages. The following log messages are EXPECTED due to test design (testing failure conditions):

WARNING: (UTIL\_AXIS\_ORDER) User must ensure PhUSE/CSS utilities are in the AUTOCALL path.

ERROR: (UTIL\_AXIS\_ORDER) MIN (-8) and MAX () must be ascending, non-missing numeric values.

ERROR: (UTIL\_AXIS\_ORDER) MIN (52) and MAX () must be ascending, non-missing numeric values.

ERROR: (UTIL\_AXIS\_ORDER) MIN () and MAX () must be ascending, non-missing numeric values.

ERROR: (UTIL\_AXIS\_ORDER) MIN (1E-2) and MAX (0.01) must be ascending, non-missing numeric values.

ERROR: (UTIL\_AXIS\_ORDER) MIN (315.01) and MAX (315.010) must be ascending, non-missing numeric values.

ERROR: (UTIL\_AXIS\_ORDER) MIN (075) and MAX (75.0) must be ascending, non-missing numeric values.

ERROR: (UTIL\_AXIS\_ORDER) MIN (-5.1) and MAX (-5.12) must be ascending, non-missing numeric values.

ERROR: (UTIL\_AXIS\_ORDER) MIN (3) and MAX (-15) must be ascending, non-missing numeric values.

ERROR: (UTIL\_AXIS\_ORDER) MIN (67) and MAX (57) must be ascending, non-missing numeric values.