5.1 Problem 1:

Describe a test plan for the various implementations of calc. Given that the program cannot be tested on every possible input, what are three examples of tests that are implied by the spec but not checked by basic arithmetic.sh?

1. A test to check whether the input is an integer or not

This is to check for non-integers like string, boolean, float, long, etc.

2. A test to check whether it is not an unexpected input

Although the basic_arithmetic.sh is a calculation for addition, since it is an arithmetic, this test is for checking whether the calculation is not undefined, such as dividing the integer by zero.

3. A test to check whether the output of the calculation is not tiny

This is to check whether the output number is not giving an error for going over the length of an integer after the calculation.

5.2 Problem 2:

The test scripts should print an error message and return non-zero. This is because the spec is asking for a sum of the “two” integer input. There are several cases we would have to deal with if we allow three arguments. First, the third input may not be a integer, and even if it was, it may be a number that is too tiny. Secondly, if we allow three inputs, it would be odd to not let more inputs such as 4 or 5 arguments at the same time. At last, since the spec does not specify which two integers should be added, there may be possibilities where we randomly select the two integers out of all the given arguments, which would make it more complex.