Triangle Problem Test Case Identification

Black Box test case identifications:

The feature sets and use cases can be easily determined by the Triangle Program's specification. Then we can apply different black box testing methods to identify test cases.

For example, the following table shows the result of applying *strong robust equivalence class partitioning*

Feature Set:	Use Case	Test Case No.	A	B	C	Exp Output
Valid Triangle						
	Equilateral					
		TC#1	*5*	*5*	*5*	*Equilateral*
	Isosceles					
		TC#2	*2*	*2*	*3*	*Isosceles*
	Scalene					
		TC#3	*3*	*4*	*5*	*Scalene*
Not A Triangle						
	Sum of two sides < the third side					
		TC#3	*4*	*1*	*2*	*Not A Triangle*
		TC#4	*1*	*2*	*4*	*Not A Triangle*
		TC#5	*1*	*4*	*2*	*Not A Triangle*
	Invalid input (one side)					
		TC#6	<min	5	5	*Not A Triangle*
		TC#7	5	<min	5	*Not A Triangle*
		TC#8	5	5	<min	*Not A Triangle*
		TC#9	>max	5	5	*Not A Triangle*
		TC#10	5	>max	5	*Not A Triangle*
		TC#11	5	5	>max	*Not A Triangle*

	Invalid input (two side)					
			<min	<min	5	***Not A Triangle***
		TC#13	5	<min	<min	***Not A Triangle***
		TC#14	<min	5	<min	***Not A Triangle***
		TC#15	>max	>max	5	***Not A Triangle***
		TC#16	5	>max	>max	***Not A Triangle***
		TC#17	>max	5	>max	***Not A Triangle***
	Invalid input (three side)					
		TC#18	<min	<min	<min	***Not A Triangle***
		TC#19	>max	>max	>max	***Not A Triangle***

If we consider the simple boundary value analysis method to develop test cases, the following can be a sample result: (assume 1 < = side length <= 200)

Test Cases	**A**	**B**	**C**	**Exp Output**
	100	***100***	***1***	***Isosceles***
	100	***100***	***2***	***Isosceles***
	100	***100***	***100***	***Equilateral***
	100	***100***	***199***	***Isosceles***
	100	***100***	***200***	***Not A Triangle***
	100	***1***	***100***	***Isosceles***
	100	***2***	***100***	***Isosceles***
	100	***100***	***100***	***Equilateral***
	100	***199***	***100***	***Isosceles***
	100	***200***	***100***	***Not A Triangle***
	1	***100***	***100***	***Isosceles***
	2	***100***	***100***	***Isosceles***
	100	***100***	***100***	***Equilateral***
	199	***100***	***100***	***Isosceles***
TC#4	***200***	***100***	***100***	***Not A Triangle***

Note 1: you should further consider the robust testing and worst-case testing to generate a complete set of test cases if you are using the boundary value analysis

Note 2: you may also use other Black-box Testing Paradigms such as error-guessing, regression testing, etc. to identify test cases.