IT313 Software Engineering Lab - 8
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Question: Write a set of test cases – specific sets of data – to properly test a relatively Simple program. Create a set of test data for the program - data the program must handle correctly to be considered a successful program.

Here's a description of the program:

"The program reads three integer values from an input dialog. The three values represent the lengths of the sides of a triangle. The program displays a message that states whether the triangle is scalene, isosceles, or equilateral".

Code: The function triangle takes three integer parameters that are interpreted as the lengths of the sides of a triangle. It returns whether the triangle is equilateral (three lengths equal), isosceles (two lengths equal), scalene (no lengths equal), or invalid (impossible lengths).

```
final int EQUILATERAL = 0;
final int ISOSCELES = 1;
final int SCALENE = 2;
final int INVALID = 3;
int triangle(int a, int b, int c)
{
   if (a >= b+c || b >= a+c || c >= a+b)
        return(INVALID);
   if (a == b && b == c)
        return(EQUILATERAL);
   if (a == b || a == c || b == c)
        return(ISOSCELES);
   return(SCALENE);
}
```

Test Action	Input Data			Code Output	Expected Output	Result
	a	b	c			
Equilateral	4	4	4	Equilateral	Equilateral	true
Equilateral	6	6	6	Equilateral	Equilateral	true
Equilateral	128	128	128	Equilateral	Equilateral	true
Equilateral	**2147483 647**	**2147483 647**	**2147483 647**	Invalid	Equilateral	false
Equilateral	234	234	234	Equilateral	Equilateral	true
Invalid	10	20	300	Invalid	Invalid	true
Invalid	75	18	39	Invalid	Invalid	true
Invalid	-2	23	23	Invalid	Invalid	true
Invalid	-5	-5	76	Invalid	Invalid	true
Invalid	33	34	80	Invalid	Invalid	true
Isosceles	51	51	39	Isosceles	Isosceles	true
Isosceles	145	133	145	Isosceles	Isosceles	true
Isosceles	89	90	90	Isosceles	Isosceles	true
Isosceles	**2147483 647**	25	**2147483 647**	Invalid	Isosceles	false
Isosceles	45	45	78	Isosceles	Isosceles	true
Scalene	69	75	62	Scalene	Scalene	true
Scalene	56	45	65	Scalene	Scalene	true
Scalene	43	39	45	Scalene	Scalene	true
Scalene	**2147483 647**	**2147483 646**	**2147483 645**	Invalid	Scalene	false
Scalene	4	9	7	Scalene	Scalene	true