Hooke's Law Degree of Freedom Analysis - Detect over-specified designs

Compression spring - Over-specified cases   **Key:** 0=Free; 1=Fix   Redundant

Case #	OD_Free	Wire_Dia	L_Free	Coils_T	Force_1	Force_2	Rate	Deflect_1	Deflect_2	L_1	L_2	L_Stroke	L_Solid	Total	Notes*
1	1	1	1	1	1	1								6	1
2	1	1		1		1								4	2
3	1	1		1	1	1		1	1					7	3
4	1	1		1	1			1						5	
5	1	1		1		1			1					5	
6	1	1		1			1							4	
7	1	1	1	1	1					1				6	
8	1	1	1	1		1					1			6	
9	1	1	1	1								1		5	
10	1	1		1								1		4	
11	1	1		1	1							1		5	4
12	1	1		1		1						1		5	5
13	1	1		1				1				1		5	4
14	1	1		1					1			1		5	5
15	1	1		1						1		1		5	4
16	1	1		1							1	1		5	5
17	1	1		1									1	4	
18			1					1		1				3	
19			1						1		1			3	
20		1	1	1										3	2

* Notes

The presence of a row indicates that this combination of Fixes is potentially (depending on values) an over-specified situation.

This grid is a long way from being complete, especially for over-specified cases not related to Hooke's Law.

The ordering of row entries (assignment of Case #) is somewhat arbitrary (i.e. is only partly systematic, semi-random).

1	No Free IV
2	Not limited by Hooke's Law; depending on values, limited by solid condition
3	Redundant - is sum of next two cases; See Dual line Force - Deflection chart
4	Not limited by Hooke's Law, limited by stress & material properties
5	Similar to previous; See case 2 & note 2