

Number and Strip Lengths for Platonic and Archimedean Solids using Heinz Strobl's Snapology Technique

	Vertex description	Number of					Number of edges	Number of vertices	Inside Scaffolding # lengths of x	Outside Hinges - # lengths of 4	Number of squares inside OR outside	Total squares	approx dihedral Angel 180- Dual		approx dihedral Angel 180-			
		Triangles (3)	Squares (4)	Pentagons (5)	Hexagon (6)	Octagon (8)							Decagons (10)					
Platonic																		
1	Tetrahedron	(3,3,3)	4					6	4	4 of 6	6	24	48	70.53	109.47	tetrahedron	71	109
2	Octahedron	(3,3,3,3)	8					12	6	8 of 6	12	48	96	109.47	70.53	cube	90	90
3	Hexahedron (cube)	(4,4,4)		6				12	8	6 of 8	12	48	96	90	90	octahedron	109	71
4	Icosahedron	(3,3,3,3,3)	20					30	12	20 of 6	30	120	240	138.19	41.81	dodecahedron	117	63
5	Dodecahedron	(5,5,5)			12			30	20	12 of 10	30	120	240	116.56	63.44	icosahedron	138	42
Archimedean																		
6	Truncated tetrahedron	(3,6,6)	4			4		18	12	4 of 6 / 4 of 12	18	72	144	See 6		triakis tetrahedron		
7	Truncated octahedron	(4,6,6)		6		8		36	24	6 of 8 / 8 of 12	36	144	288	See 7		tetrakis hexahedron		
8	Truncated cube (hexahedron)	(3,8,8)	8				6	36	24	8 of 6 / 6 of 16	36	144	288	See 8		small triakis octahedron		
9	Truncated icosahedron	(5,6,6)			12	20		90	60	12 of 10 / 20 of 12	90	360	720	See 9		pentakis dodecahedron		
10	Truncated dodecahedron	(3,10,10)	20				12	90	60	20 of 6 / 12 of 20	90	360	720	See 10		triakis icosahedron		
11	Cuboctahedron	(3,4,3,4)	8	6				24	12	8 of 6 / 6 of 8	24	96	192	125.264	54.736	rhombic dodecahedron	120	60
12	Icosidodecahedron	(3,5,3,5)	20		12			60	30	20 of 6 / 12 of 10	60	240	480	142.623	37.377	rhombic triacontahedron	144	36
13	(Small) Rhombicuboctahedron	(3,4,4,4)	8	18				48	24	8 of 6 / 18 of 8	48	192	384	See 13		deltoidal icositetrahedron/ trapezoidal icositetrahedron	138	42
14	Small Rhombicosidodecahedron	(3,4,5,4)	20	30	12			120	60	20 of 6 / 30 of 8 / 12 of 10	120	480	960	See 14		deltoidal hexecontahedron		
15	Truncated cuboctahedron/ Great rhombicuboctahedron	(4,6,8)		12		8	6	72	48	12 of 8 / 8 of 12 / 6 of 16	72	288	576	See 15		disdyakis dodecahedron		
16	Great rhombicosidodecahedron Truncated Icosidodecahedron	(4,6,10)		30		20		180	120	30 of 8 / 20 of 12 / 12 of 20	180	720	1440	See 16		disdyakis triacontahedron		
17	Snub cube	(3,3,3,3,4)	32	6				60	24	32 of 6 / 6 of 8	60	240	480	See 17		pentagonal icositetrahedron (dextro)		
18	Snub dodecahedron	(3,3,3,3,5)	80		12			150	60	80 of 6 / 12 of 10	150	600	1200	See 18		pentagonal hexecontahedron (dextro)		

Calculation example:

To make the icosahedron, use 4 strips of 60 squares each.
 When using 3/4" ribbon, each piece of ribbon is cut into lengths slightly over 45"
 (60 squares x .75" = 45" and leave some extra for spare)
 Remember to make each witch's ladder with one scaffold and one hinge ribbon

Euler's formular F+V=E+2

Face+vertex = edge+2

XX

miscellaneous

Number and Strip Lengths for Platonic and Archimedean Solids using Heinz Strobl's Snapology Technique

	Vertex description	Number of					Number of edges	Number of vertices	Inside Scaffolding # lengths of x	Outside Hinges - # lengths of 4	Number of squares inside OR outside	Total squares	approx dihedral Angel 180- Dual	approx dihedral Angel 180-
		Triangles (3)	Squares (4)	Pentagons (5)	Hexagon (6)	Octagon (8)								
6	Truncated tetrahedron	hex-hex	70.53	109.47										
		hex-tri	109.5	70.53										
7	Truncated octahedron	square-hex	125.3	54.73										
		hex-hex	109.5	70.54										
8	Truncated cube (hexahedron)	Oct-Tri	125.7	54.33										
		Oct-Oct	90	90										
9	Truncated icosahedron	hex-hex	138.2	41.817										
		hex-pent	142.6	37.38										
10	Truncated dodecahedron	dec-dec	116.7	63.33										
		dec-tri	142.6	37.38										
14	Small Rhombicosidodecahedron	pentagon-square	148	32										
		triangle-square	159	21										
13	(Small) Rhombicuboctahedron	square-square	135	45										
		square-triangle	144.5	35.5										
15	Truncated cuboctahedron/	oct-square	135	45										
		oct-hex	125.3	54.73										
		hex-square	144.7	35.27										
16	Great rhombicosidodecahedron	hexagon-decagon	142.623	37.377										
		square-decagon	148.280	31.72										
		Hexagon-square	159.095	20.905										
17	Snub cube	square-triangle	143	37										
		triangle-triangle	153	27										
18	Snub dodecahedron	Pentagon-triangle	152	28										
		triangle-triangle	164	16										
11	Cuboctahedron		125.264											
12	Icosidodecahedron		142.6											