

Type: P = Platonic, A = Archimedean

#	Name(s)	symmetry	# of triangles 3	# of squares 4	# of pentagons 5	# of hexagons 6	# of octagons 8	# of decagons 10	total # of faces	total # of edges	total # of vertices (a.k.a. apices)	total surface area (edge length = 1)	total surface area (circumradius = 1)	total surface area (inradius = 1)
P 1	Tetrahedron	tetrahedral	4						4	6	4	1.73205080751	2.82842712465	8.48528137395
P 2	Hexahedron (cube)	2,3,4-fold		6					6	12	8	6.00000000000	6.92820323028	12.00000000000
P 3	Octahedron	2,3,4-fold	8						8	12	6	3.46410161502	4.89897948540	8.48528137395
P 4	Dodecahedron	2,3,5-fold			12				12	30	20	20.64572880590	14.73370419482	18.54101966145
P 5	Icosahedron	2,3,5-fold	20						20	30	12	8.66025403755	9.10592997279	11.45898033711
A 1	Truncated Octahedron (Mecon)	2,3,4-fold		6		8			14	36	24	26.78460968939	16.94074571142	18.82230507935
A 2	Cuboctahedron (Dymaxion)	2,3,4-fold	8	6					14	24	12	9.46410161502	9.46410161502	12.61880215336
A 3	Truncated Cuboctahedron	2,3,4-fold	12			6			26	72	48	61.75517243511	26.4604934727	27.94678949212
A 4	Snub Cube	2,3,4-fold	32	6					38	60	24	19.85640646007	14.77726340160	17.15216535192
A 5	(Small) Rhombicuboctahedron	2,3,4-fold	8	18					26	48	24	21.46410161502	15.34282935667	17.58973469466
A 6	Truncated Cube	2,3,4-fold	8				6		14	36	24	32.43466436074	18.23377176248	19.79798208648
A 7	Truncated Icosahedron (soccer ball)	2,3,5-fold			12	20			32	90	60	72.60725302937	29.30052716257	30.54406110566
A 8	Icosidodecahedron	2,3,5-fold	20		12				32	60	30	29.30598284344	18.11209347097	20.02423805537
A 9	Truncated Icosidodecahedron	2,3,5-fold	30			20		12	62	180	120	174.29203032745	45.83744015364	46.64397132720
A 10	Snub Dodecahedron	2,3,5-fold	80		12				92	150	60	55.28674495608	25.64513705637	27.10303080454
A 11	(Small) Rhombicosidodecahedron	2,3,5-fold	20	30	12				62	120	60	59.30598284344	26.55947034803	27.96144929313
A 12	Truncated Dodecahedron	2,3,5-fold	20					12	32	90	60	100.99076014152	34.00993234839	35.00232879992
A 13	Truncated Tetrahedron	tetrahedral	4			4			8	18	12	12.12435565220	10.33968524160	12.63739307307

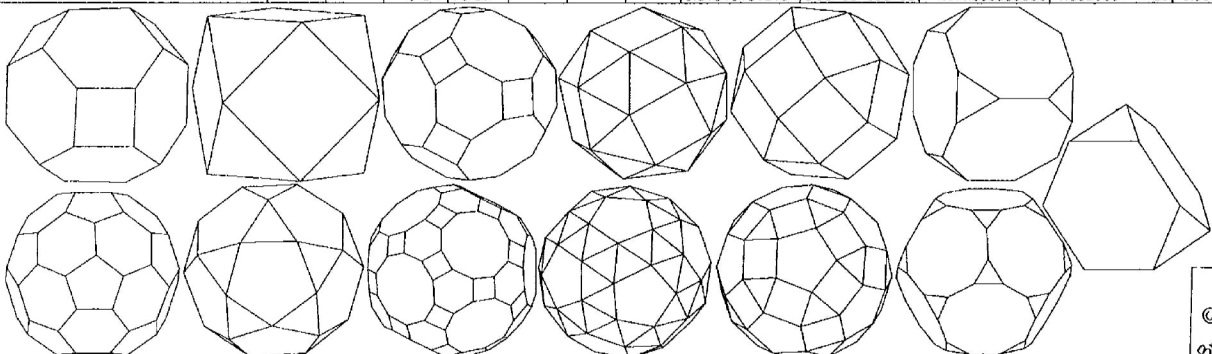
face angles for corresponding face components

e = edge length
r = insphere radius = inradius
R = circumsphere radius = circumradius

#	Name(s)	Volume *	Dihedral angles between polygons with this many sides	Central Angle	Circumradius (R)	Inradius (r)	Circumradius (R)	Edge Length (e)	Edge Length (e)	Edge Length (e)
P 1	Tetrahedron	0.117851	70°32'	3-3	109°28'	3.00000000000	1.732050807569	1.632993161855	2.828427124746	4.898979485566
P 2	Hexahedron (cube)	1.000000	90°	4-4	70°32'	1.732050807569	1.224744871392	1.154700538379	1.414213562373	2.000000000000
P 3	Octahedron	0.471405	109°28'	3-3	90°	1.732050807569	1.414213562373	1.414213562373	2.000000000000	2.449489742783
P 4	Dodecahedron	7.663119	116°34'	5-5	41°49'	1.258408572365	1.070466269319	0.713644179546	0.763932022550	0.898055953159
P 5	Icosahedron	2.181695	138°11'	3-3	63°26'	1.258408572365	1.175570504585	1.051462224238	1.236067977500	1.323169076499
A 1	Truncated Octahedron (Mecon)	11.31371		6-6	36°52'	1.111111111111	1.054092553389	0.632455532034	0.666666666667	0.702728368926
A 2	Cuboctahedron (Dymaxion)	2.357023	125°16'	4-6	60°	1.333333333333	1.154700538379	1.000000000000	1.154700538379	1.333333333333
A 3	Truncated Cuboctahedron	41.79899		6-8	24°55'	1.048815536469	1.024116954488	0.431478810545	0.441884765381	0.462541680156
A 4	Snub Cube	7.889477	153°14'	4-10	43°41'	1.160713244786	1.077364026124	0.744206331156	0.801781129201	0.863810145426
A 5	(Small) Rhombicuboctahedron	8.714045	144°44'	4-6	41°53'	1.146446609407	1.070722470768	0.714813488673	0.765366864730	0.819495500448
A 6	Truncated Cube	13.59966		8-8	32°39'	1.085786437627	1.042010766560	0.562169275430	0.585786437627	0.610395774912
A 7	Truncated Icosahedron (soccer ball)	55.28773		6-10	23°17'	1.042440667917	1.020999837373	0.403548212335	0.412022659167	0.420675068003
A 8	Icosidodecahedron	13.83553		6-10	36°	1.105572809000	1.051462224238	0.618033988750	0.649839392466	0.683281573000
A 9	Truncated Icosidodecahedron	206.8034		6-10	15°6'	1.017595468167	1.008759370795	0.262992175073	0.265295821050	0.267619645517
A 10	Snub Dodecahedron	37.61565	164°11'	10-10	26°49'	1.056848740756	1.028031488212	0.463858680645	0.476859479327	0.490226560201
A 11	(Small) Rhombicosidodecahedron	41.61532		10-10	25°52'	1.052786404500	1.026053801952	0.447837959589	0.459505841095	0.471472715274
A 12	Truncated Dodecahedron	85.03966		10-10	11°24'	1.029179606750	1.014484897251	0.336762811773	0.341640786500	0.346589418189
A 13	Truncated Tetrahedron	2.710576		10-10	50°28'	1.222222222222	1.105541596785	0.852802865422	0.942809041582	1.042314613294

* in multiples of edge length cubed

#	Name(s)	Dihedral angles between polygons with this many sides	Inradius (r)	Interradius (rho)	Circumradius (R)	Interradius (rho)	Inradius (r)
P 1	Tetrahedron	3-8	0.333333333333	0.577350269190	0.612372435696	0.353553390593	0.204124145232
P 2	Hexahedron (cube)	3-10	0.577350269190	0.816496580928	0.866025403784	0.707106781187	0.500000000000
P 3	Octahedron	4-5	0.577350269190	0.707106781187	0.707106781187	0.500000000000	0.408248290464
P 4	Dodecahedron	4-6	0.794654472292	0.934172358963	1.401258538444	1.309016994375	1.13516364412
P 5	Icosahedron	4-8	0.794654472292	0.850650808352	0.951056516295	0.809016994375	0.755761314076
A 1	Truncated Octahedron (Mecon)	4-10	0.900000000000	0.948683298051	1.581138830084	1.500000000000	1.423024947076
A 2	Cuboctahedron (Dymaxion)	4-10	0.750000000000	0.866025403784	1.000000000000	0.866025403784	0.750000000000
A 3	Truncated Cuboctahedron	4-10	0.953456509013	0.976450976247	2.317610912893	2.263033438454	2.209741210257
A 4	Snub Cube	4-10	0.861539234167	0.928191377986	1.343713373745	1.247223167994	1.157661790956
A 5	(Small) Rhombicuboctahedron	4-10	0.872260419103	0.933948831094	1.398966325966	1.306562964876	1.220262953798
A 6	Truncated Cube	4-10	0.920991426441	0.959682982261	1.778823645664	1.707106781187	1.638281326807
A 7	Truncated Icosahedron (soccer ball)	4-10	0.959287210080	0.979432085486	2.478018659068	2.427050983125	2.377131605984
A 8	Icosidodecahedron	4-10	0.904508497187	0.951056516295	1.618033988750	1.538841768588	1.463525491562
A 9	Truncated Icosidodecahedron	4-10	0.98270878963	0.991316689541	3.802394499851	3.769377127922	3.736646456083
A 10	Snub Dodecahedron	4-10	0.946209198569	0.972732850566	2.155837375116	2.097053835252	2.03987154954
A 11	(Small) Rhombicosidodecahedron	4-10	0.949860290488	0.974607762378	2.232950509416	2.176250899483	2.120991019518
A 12	Truncated Dodecahedron	4-10	0.971647702152	0.985721919281	2.969449015863	2.927050983125	2.885258312920
A 13	Truncated Tetrahedron	4-10	0.818181818182	0.904534033733	1.127603939956	1.060660171780	0.959403223600



Platonic and Archimedean Solid Data with Relationships to Spheres