CHARACTER TABLE FOR D_{nh} POINT GROUP

Character table for D_{2h} point group

	E	C_2 (z)	C_2 (y)	C_2 (x)	i	σ (xy)	σ (xz)	σ (yz)	Linear Functions, Rotations	Quadratic
A_g	1	1	1	1	1	1	1	1		x^2, y^2, z^2
B_{1g}	1	1	-1	-1	1	1	-1	-1	R_z	xy
B_{2g}	1	-1	1	-1	1	-1	1	-1	R_y	xz
B_{3g}	1	-1	-1	1	1	-1	-1	1	R_x	yz
A_u	1	1	1	1	-1	-1	-1	-1		
B_{1u}	1	1	-1	-1	-1	-1	1	1	z	
B_{2u}	1	-1	1	-1	-1	1	-1	1	y	
B_{3u}	1	-1	-1	1	-1	1	1	-1	x	

Character table for D_{3h} point group

	E	$2C_3$	$3C'_2$	σ_h	$2S_3$	$3\sigma_v$	Linear Functions, Rotations	Quadratic
A'_1	1	1	1	1	1	1		x^2+y^2, z^2
A'_2	1	1	-1	1	1	-1	R_z	
E'	2	-1	0	2	-1	0	(x, y)	(x^2-y^2, xy)
A''_1	1	1	1	-1	-1	-1		
A''_2	1	1	-1	-1	-1	1	z	
E''	2	-1	0	-2	1	0	(R_x, R_y)	(xz, yz)

Character table for D$_{4h}$ point group

	E	2C$_4$ (z)	C$_2$	2C'$_2$	2C''$_2$	i	2S$_4$	σ$_h$	2σ$_v$	2σ$_d$	Linear Functions, Rotations	Quadratic
A$_{1g}$	1	1	1	1	1	1	1	1	1	1		x^2+y^2, z^2
A$_{2g}$	1	1	1	-1	-1	1	1	1	-1	-1	R$_z$	
B$_{1g}$	1	-1	1	1	-1	1	-1	1	1	-1		x^2-y^2
B$_{2g}$	1	-1	1	-1	1	1	-1	1	-1	1		xy
E$_g$	2	0	-2	0	0	2	0	-2	0	0	(R$_x$, R$_y$)	(xz, yz)
A$_{1u}$	1	1	1	1	1	-1	-1	-1	-1	-1		
A$_{2u}$	1	1	1	-1	-1	-1	-1	-1	1	1	z	
B$_{1u}$	1	-1	1	1	-1	-1	1	-1	-1	1		
B$_{2u}$	1	-1	1	-1	1	-1	1	-1	1	-1		
E$_u$	2	0	-2	0	0	-2	0	2	0	0	(x, y)	

Character table for D$_{5h}$ point group

	E	2C$_5$	2(C$_5$)^2	5C'$_2$	σ$_h$	2S$_5$	2(S$_5$)^3	5σ$_v$	Linear Functions, Rotations	Quadratic
A'$_1$	1	1	1	1	1	1	1	1		x^2+y^2, z^2
A'$_2$	1	1	1	-1	1	1	1	-1	R$_z$	
E'$_1$	2	2cos(2π/5)	2cos(4π/5)	0	2	2cos(2π/5)	2cos(4π/5)	0	(x, y)	
E'$_2$	2	2cos(4π/5)	2cos(2π/5)	0	2	2cos(4π/5)	2cos(2π/5)	0		(x^2-y^2, xy)
A"$_1$	1	1	1	1	-1	-1	-1	-1		
A"$_2$	1	1	1	-1	-1	-1	-1	1	z	
E"$_1$	2	2cos(2π/5)	2cos(4π/5)	0	-2	-2cos(2π/5)	-2cos(4π/5)	0	(R$_x$, R$_y$)	(xz, yz)
E"$_2$	2	2cos(4π/5)	2cos(2π/5)	0	-2	-2cos(4π/5)	-2cos(2π/5)	0		

Character table for D_{6h} point group

	E	2C$_6$	2C$_3$	C$_2$	3C'$_2$	3C''$_2$	i	2S$_3$	2S$_6$	σ$_h$	3σ$_d$	3σ$_v$	Linear Functions, Rotations	Quadratic
A$_{1g}$	1	1	1	1	1	1	1	1	1	1	1	1		x^2+y^2, z^2
A$_{2g}$	1	1	1	1	-1	-1	1	1	1	1	-1	-1	R$_z$	
B$_{1g}$	1	-1	1	-1	1	-1	1	-1	1	-1	1	-1		
B$_{2g}$	1	-1	1	-1	-1	1	1	-1	1	-1	-1	1		
E$_{1g}$	2	1	-1	-2	0	0	2	1	-1	-2	0	0	(R$_x$, R$_y$)	(xz, yz)
E$_{2g}$	2	-1	-1	2	0	0	2	-1	-1	2	0	0		(x^2-y^2, xy)
A$_{1u}$	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1		
A$_{2u}$	1	1	1	1	-1	-1	-1	-1	-1	-1	1	1	z	
B$_{1u}$	1	-1	1	-1	1	-1	-1	1	-1	1	-1	1		
B$_{2u}$	1	-1	1	-1	-1	1	-1	1	-1	1	1	-1		
E$_{1u}$	2	1	-1	-2	0	0	-2	-1	1	2	0	0	(x, y)	
E$_{2u}$	2	-1	-1	2	0	0	-2	1	1	-2	0	0		