CHARACTER TABLE FOR D_{nd} POINT GROUP

Character table for D_{2d} point group

	E	$2S_4$	C_2 (z)	$2C'_2$	$2\sigma_d$	Linear Functions, Rotations	Quadratic
A_1	1	1	1	1	1		x^2+y^2, z^2
A_2	1	1	1	-1	-1	R_z	
B_1	1	-1	1	1	-1		x^2-y^2
B_2	1	-1	1	-1	1	z	xy
E	2	0	-2	0	0	(x, y) (R_x, R_y)	(xz, yz)

Character table for D_{3d} point group

	E	$2C_3$	$3C'_2$	i	$2S_6$	$3\sigma_d$	Linear Functions, Rotations	Quadratic
A_{1g}	1	1	1	1	1	1		x^2+y^2, z^2
A_{2g}	1	1	-1	1	1	-1	R_z	
E_g	2	-1	0	2	-1	0	(R_x, R_y)	(x^2-y^2, xy) (xz, yz)
A_{1u}	1	1	1	-1	-1	-1		
A_{2u}	1	1	-1	-1	-1	1	z	
E_u	2	-1	0	-2	1	0	(x, y)	

Character table for D_{4d} point group

	E	$2S_8$	$2C_4$	$2(S_8)^3$	C_2	$4C'_2$	$4\sigma_d$	Linear Functions, Rotations	Quadratic
A_1	1	1	1	1	1	1	1		x^2+y^2, z^2
A_2	1	1	1	1	1	-1	-1	R_z	
B_1	1	-1	1	-1	1	1	-1		
B_2	1	-1	1	-1	1	-1	1	z	
E_1	2	$(2)^{1/2}$	0	$-(2)^{1/2}$	-2	0	0	(x, y)	
E_2	2	0	-2	0	2	0	0		(x^2-y^2, xy)
E_3	2	$-(2)^{1/2}$	0	$(2)^{1/2}$	-2	0	0	(R_x, R_y)	(xz, yz)

Character table for D_{5d} point group

	E	$2C_5$	$2(C_5)^2$	$5C'_2$	i	$2(S_{10})^3$	$2S_{10}$	$5\sigma_d$	Linear Functions, Rotations	Quadratic
A_{1g}	1	1	1	1	1	1	1	1		x^2+y^2, z^2
A_{2g}	1	1	1	-1	1	1	1	-1	R_z	
E_{1g}	2	$2\cos(2\pi/5)$	$2\cos(4\pi/5)$	0	2	$2\cos(2\pi/5)$	$2\cos(4\pi/5)$	0	(R_x, R_y)	(xz, yz)
E_{2g}	2	$2\cos(4\pi/5)$	$2\cos(2\pi/5)$	0	2	$2\cos(4\pi/5)$	$2\cos(2\pi/5)$	0		(x^2-y^2, xy)
A_{1u}	1	1	1	1	-1	-1	-1	-1		
A_{2u}	1	1	1	-1	-1	-1	-1	1	z	
E_{1u}	2	$2\cos(2\pi/5)$	$2\cos(4\pi/5)$	0	-2	$-2\cos(2\pi/5)$	$-2\cos(4\pi/5)$	0	(x, y)	
E_{2u}	2	$2\cos(4\pi/5)$	$2\cos(2\pi/5)$	0	-2	$-2\cos(4\pi/5)$	$-2\cos(2\pi/5)$	0		

Character table for D_{6d} point group

	E	$2S_{12}$	$2C_6$	$2S_4$	$2C_3$	$2(S_{12})^5$	C_2	$6C'_2$	$6\sigma_d$	Linear Functions, Rotations	Quadratic
A_1	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	-1	R_z	
B_1	1	-1	1	-1	1	-1	1	1	-1		
B_2	1	-1	1	-1	1	-1	1	-1	1	z	
E_1	2	$(3)^{1/2}$	1	0	-1	$-(3)^{1/2}$	-2	0	0	(x, y)	
E_2	2	1	-1	-2	-1	1	2	0	0		(x^2-y^2, xy)
E_3	2	0	-2	0	2	0	-2	0	0		
E_4	2	-1	-1	2	-1	-1	2	0	0		
E_5	2	$-(3)^{1/2}$	1	0	-1	$(3)^{1/2}$	-2	0	0	(R_x, R_y)	(xz, yz)