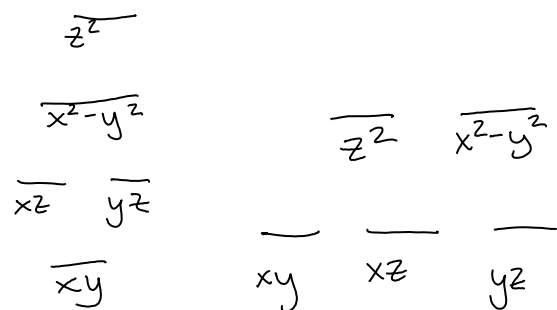


Notes 03/12

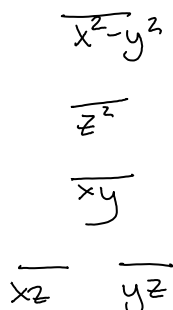
Wednesday, March 12, 2008

10:06 AM

d^2
z-in compression



d^4
z-out elongation



Selection Rules

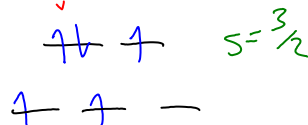
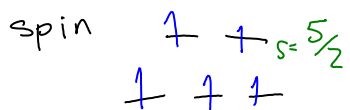
$Ti^{3+} \quad d^1$



Can this occur?

no: d-d transition by rule #3

1. Different multiplicities are forbidden $\Delta S = 0$



0 in spin calc.

$S = 2s + 1$

$S = 2s + 1 = 6$

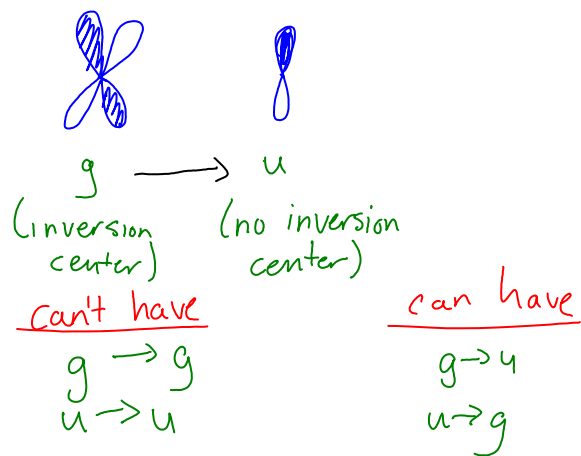
$S = 4$

$\Delta S = 6 - 4 = 2$

2. Multi electron transitions are forbidden



3. Transitions between the same parity are forbidden



Vibrations can distort geometry causing g to g or u to u to occur but colors will be very faint.

MnO_4^-	$\text{M}^{-1}\text{cm}^{-1}$
Spin forbidden	<1
Laporte forbidden	1-10
Charge transfer	1000-50,000



Does not have d electrons so cannot have color because there is no transition.