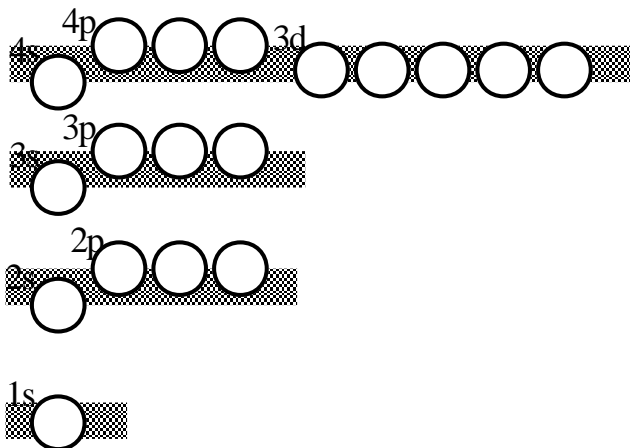


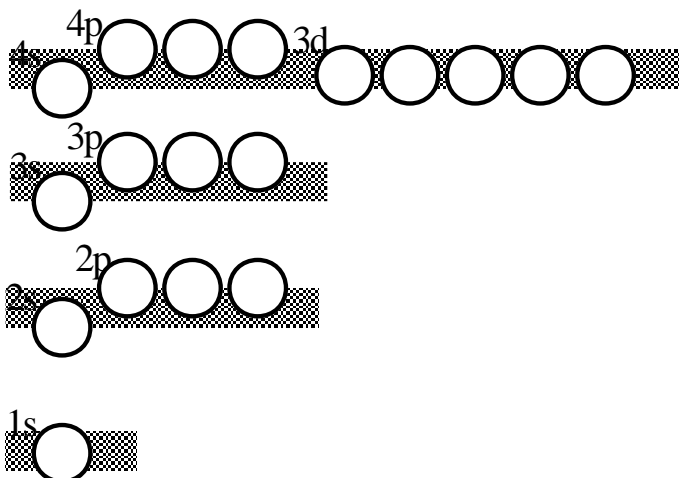
- How many electrons does neutral Vanadium have? _____ Correctly fill in the orbital diagram below as shown in class.



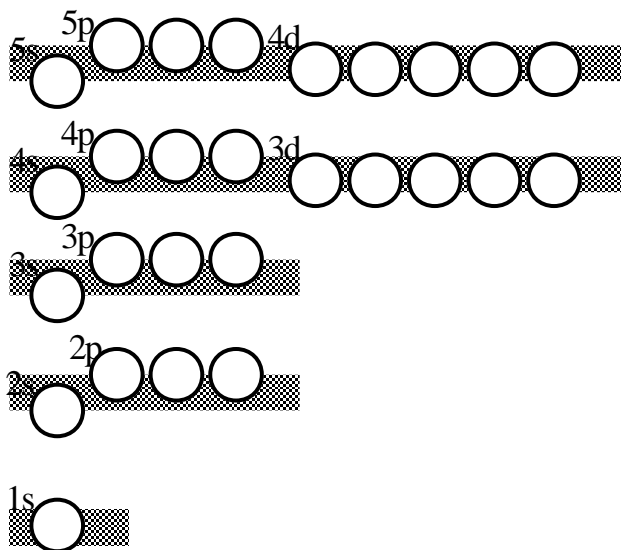
- How many valence electrons does Vanadium have? _____ Put a box around them.
- Which electrons above are *furthest away* from the nucleus? _____
- Write the Long Form electron configuration for Vanadium.

- Write the Short Form electron configuration for Vanadium.

- Which electrons in Vanadium have the *greatest amount of energy*? _____
- Would Vanadium be considered to be an s-block, p-block, d-block or f-block element? _____
- Correctly fill in the orbital diagram below for Manganese ion (Mn^{2+}), which has _____ electrons.



Correctly fill in the orbital diagram below for Molybdenum, Mo, which has _____ electrons.



Looking at the periodic table, shade in a “period”.

1																	2						
H																	He						
3	4											5	6	7	8	9	10						
Li	Be											B	C	N	O	F	Ne						
11	12																	13	14	15	16	17	18
Na	Mg																	Al	Si	P	S	Cl	Ar
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36						
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr						
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe						
55	56	57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86						
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn						
87	88	89																					
Fr	Ra	Ac																					
Lanthanides			58	59	60	61	62	63	64	65	66	67	68	69	70	71							
			Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu							
Actinides			90	91	92	93	94	95	96	97	98	99	100	101	102	103							
			Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	Nb	Lr							

Looking at the periodic table, shade in a “group”.

1																	2						
H																	He						
3	4											5	6	7	8	9	10						
Li	Be											B	C	N	O	F	Ne						
11	12																	13	14	15	16	17	18
Na	Mg																	Al	Si	P	S	Cl	Ar
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36						
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr						
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe						
55	56	57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86						
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn						
87	88	89																					
Fr	Ra	Ac																					
Lanthanides			58	59	60	61	62	63	64	65	66	67	68	69	70	71							
			Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu							
Actinides			90	91	92	93	94	95	96	97	98	99	100	101	102	103							
			Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	Nb	Lr							

What is the difference between a “group” and a “family”? _____