

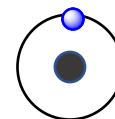
2. 電子の電子配置と 構成原理の例外

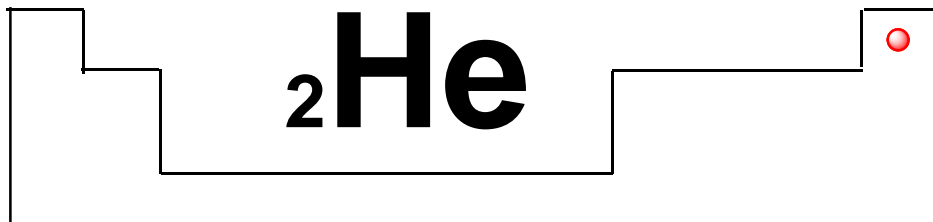
Keyword:

閉殻, 半閉殻

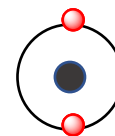


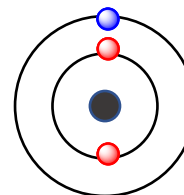
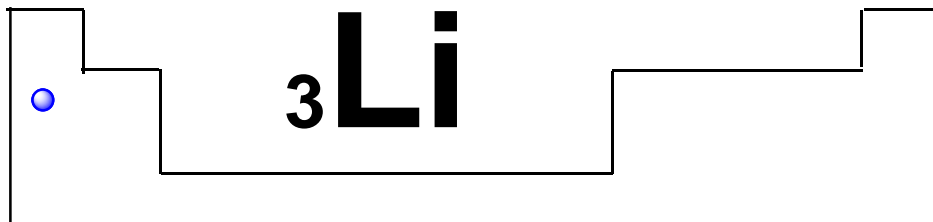
		主量子数 (n)							
K	1	1s							
L	2	2s	2p						
M	3	3s	3p	3d					
N	4	4s	4p	4d	4f				
O	5	5s	5p	5d	5f				



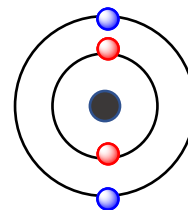


	主量子数 (n)	$1s$	$2s$	$2p$	$3s$	$3p$	$3d$	$4s$	$4p$	$4d$	$4f$	$5s$	$5p$	$5d$	$5f$
K	1														
L	2														
M	3														
N	4														
O	5														

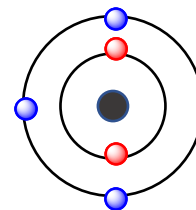




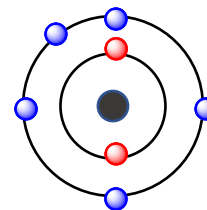
	主量子数 (n)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f	5s	5p	5d	5f
K	1														
L	2														
M	3														
N	4														
O	5														



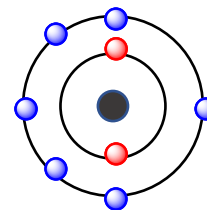
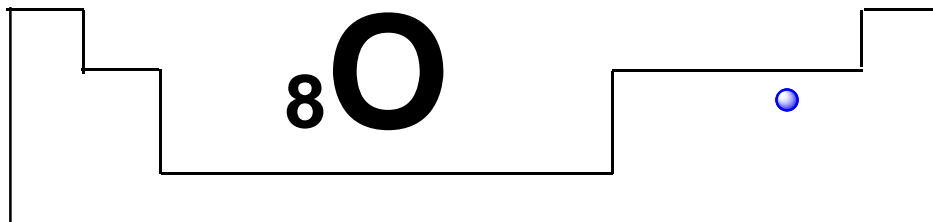
	主量子数 (<i>n</i>)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f	5s	5p	5d	5f
K	1														
L	2														
M	3														
N	4														
O	5														



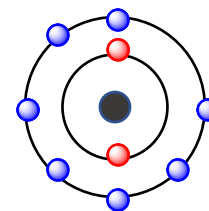
	主量子数 (n)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f
K	1										
L	2										
M	3										
N	4										
O	5										



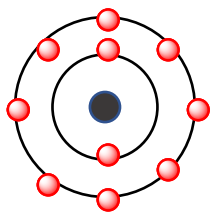
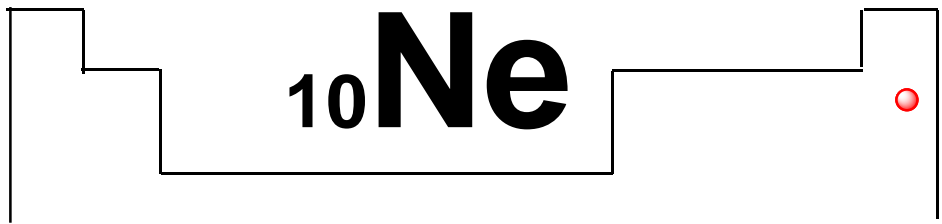
	主量子数 (n)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f
K	1										
L	2										
M	3										
N	4										
O	5										



	主量子数 (n)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f
K	1										
L	2										
M	3										
N	4										
O	5										

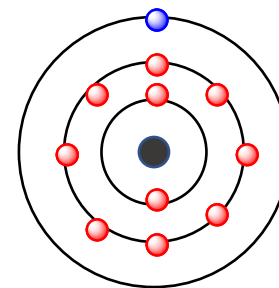


	主量子数 (n)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f
K	1										
L	2										
M	3										
N	4										
O	5										

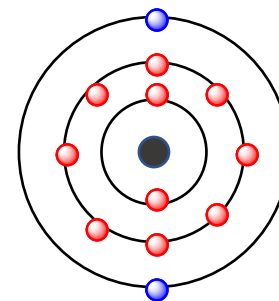


	主量子数 (<i>n</i>)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f	5s	5p	5d	5f
K	1														
L	2														
M	3														
N	4														
O	5														

閉殻

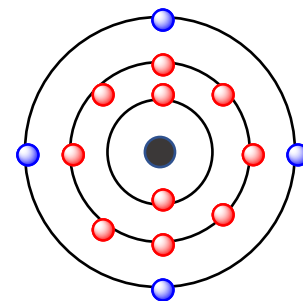


	主量子数 (n)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f
K	1										
L	2										
M	3										
N	4										
O	5										



	主量子数 (<i>n</i>)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f
K	1										
L	2										
M	3										
N	4										
O	5										

14Si



主量子数

(n)

K

1

1s



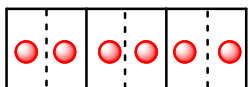
L

2

2s



2p



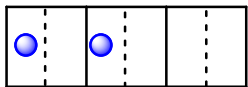
M

3

3s



3p



3d



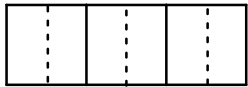
N

4

4s



4p



4d



4f



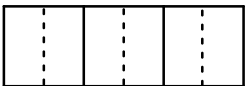
O

5

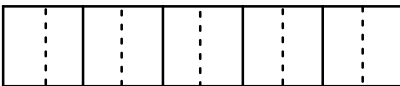
5s



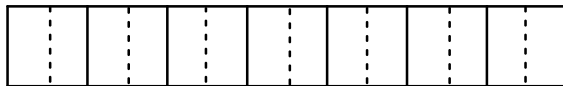
5p

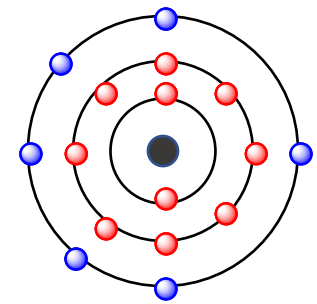


5d

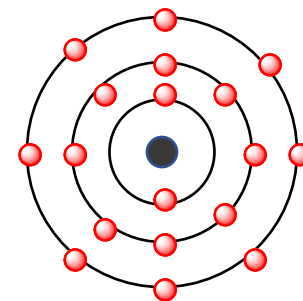


5f



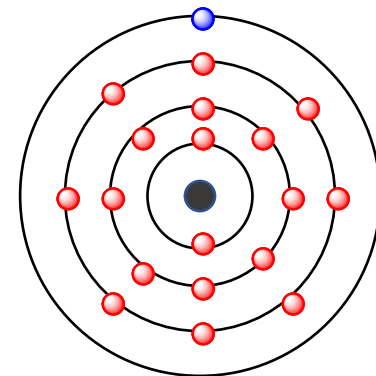


	主量子数 (n)	$1s$	$2s$	$2p$	$3s$	$3p$	$3d$	$4s$	$4p$	$4d$	$4f$
K	1										
L	2										
M	3										
N	4										
O	5										



	主量子数 (<i>n</i>)	1s	2s	2p	3s	3p	3d	4s	4p	4d	4f	5s	5p	5d	5f
K	1														
L	2														
M	3														
N	4														
O	5														

19K

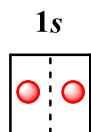


主量子数

(n)

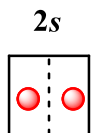
K

1



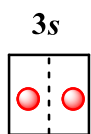
L

2



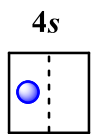
M

3



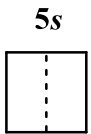
N

4

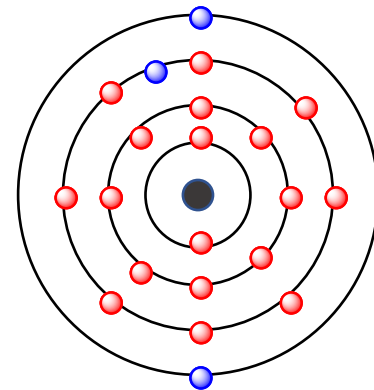


O

5



21Sc



主量子数

(*n*)

K

1

1s



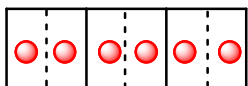
L

2

2s



2p



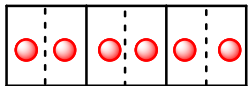
M

3

3s



3p



3d



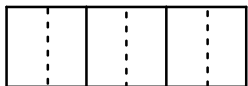
N

4

4s



4p



4d



4f



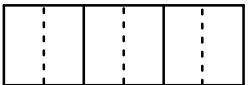
O

5

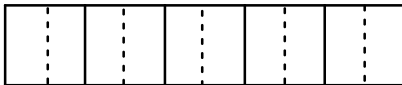
5s



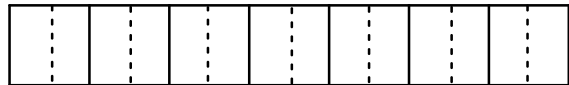
5p



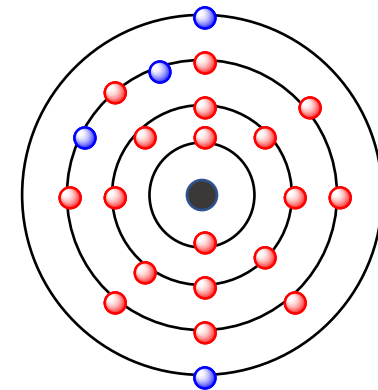
5d



5f



22 Ti

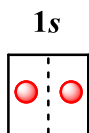


主量子数

(n)

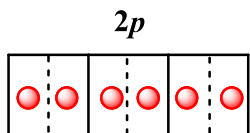
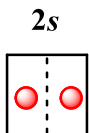
K

1



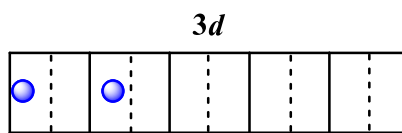
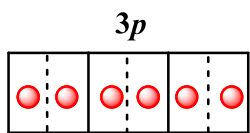
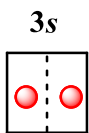
L

2



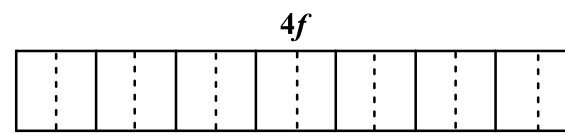
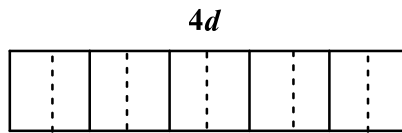
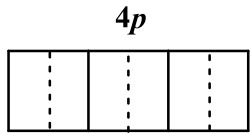
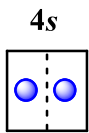
M

3



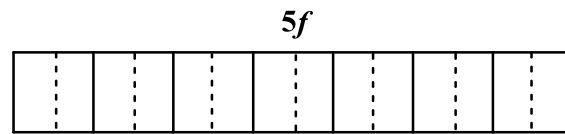
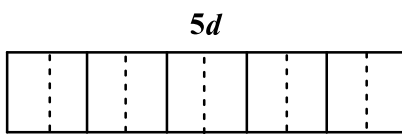
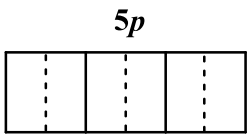
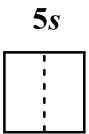
N

4

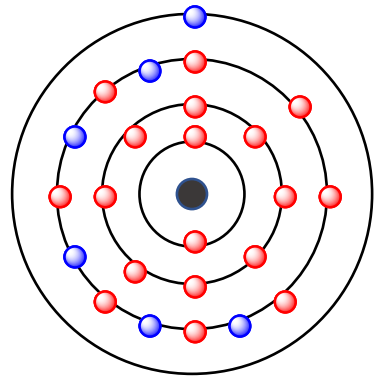


O

5



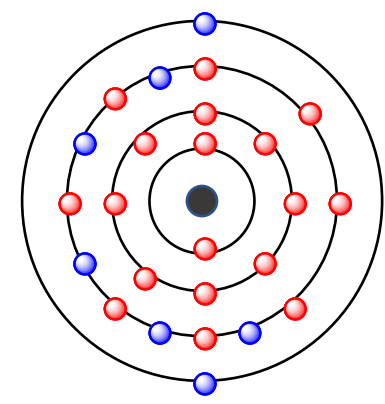
24Cr



主量子数
(*n*)

K	1	1s									
L	2	2s	2p								
M	3	3s	3p	3d							
N	4	4s	4p	4d	4f						
O	5	5s	5p	5d	5f						

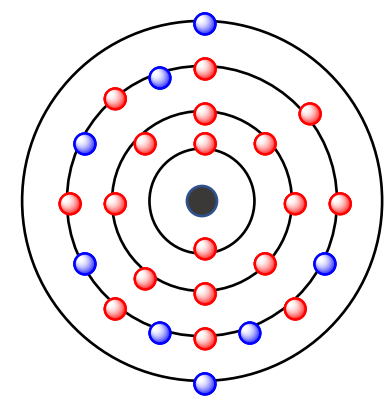
25Mn



主量子数
(*n*)

K	1	1s										
L	2	2s	2p									
M	3	3s	3p	3d								
N	4	4s	4p	4d	4f							
O	5	5s	5p	5d	5f							

26Fe



主量子数

(*n*)

K

1

1s



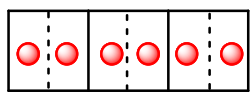
L

2

2s



2p



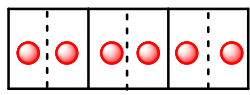
M

3

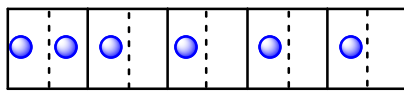
3s



3p



3d



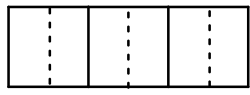
N

4

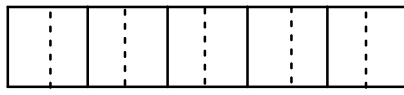
4s



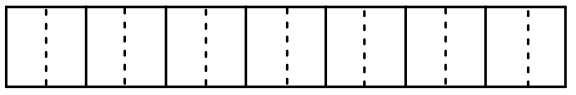
4p



4d



4f



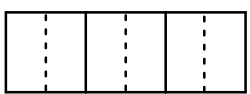
O

5

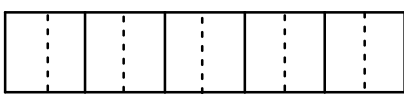
5s



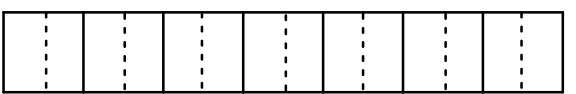
5p



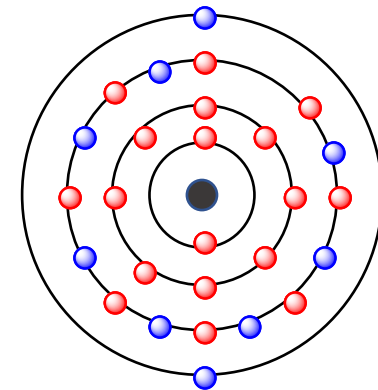
5d



5f



27Co

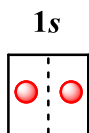


主量子数

(*n*)

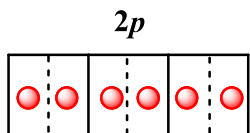
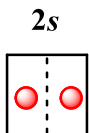
K

1



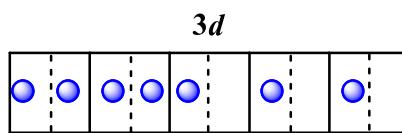
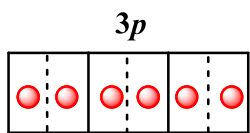
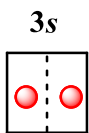
L

2



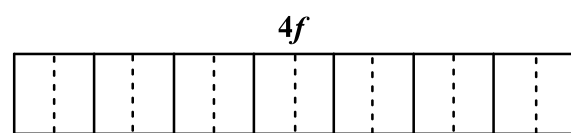
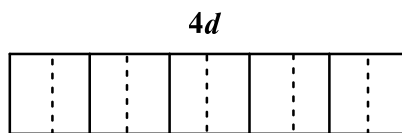
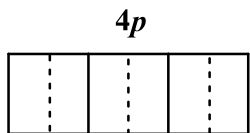
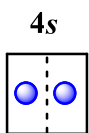
M

3



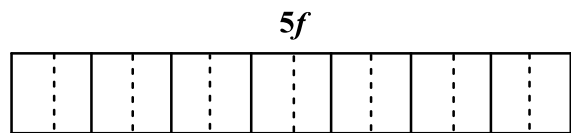
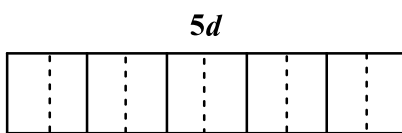
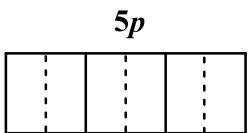
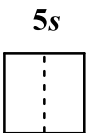
N

4

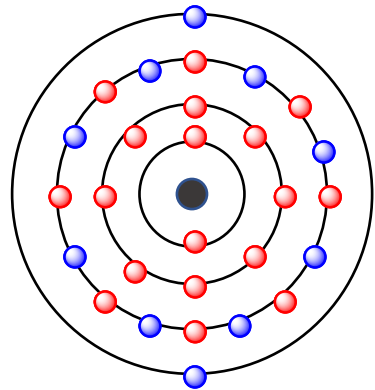


O

5



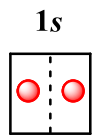
28Ni



主量子数
(*n*)

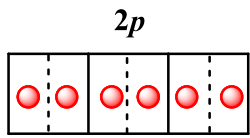
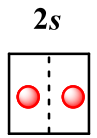
K

1



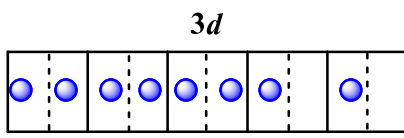
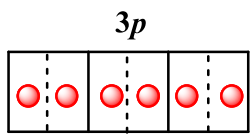
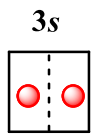
L

2



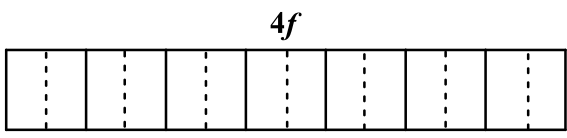
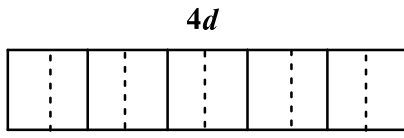
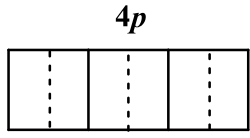
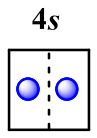
M

3



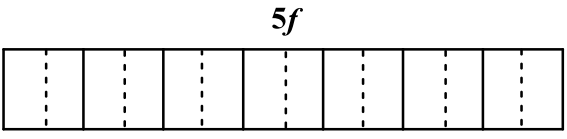
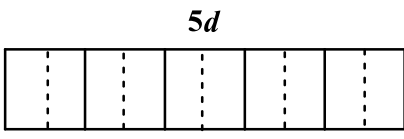
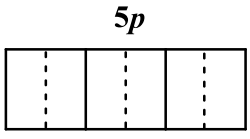
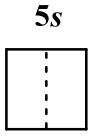
N

4

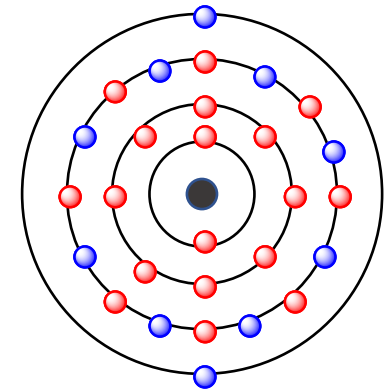


O

5



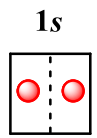
28Ni



主量子数
(*n*)

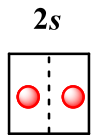
K

1

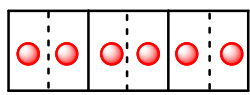


L

2

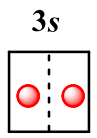


2*p*

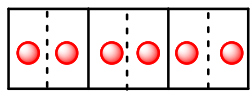


M

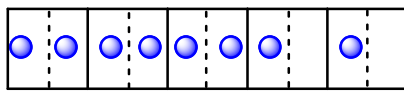
3



3*p*

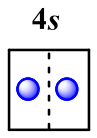


3*d*

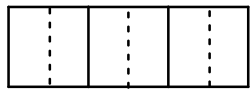


N

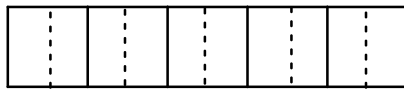
4



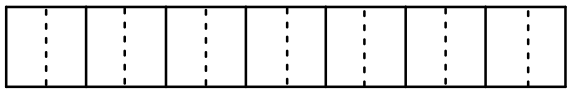
4*p*



4*d*

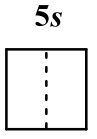


4*f*

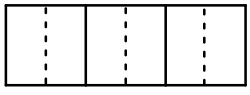


O

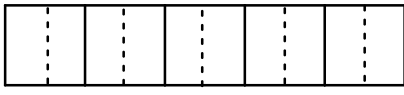
5



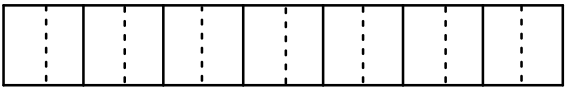
5*p*



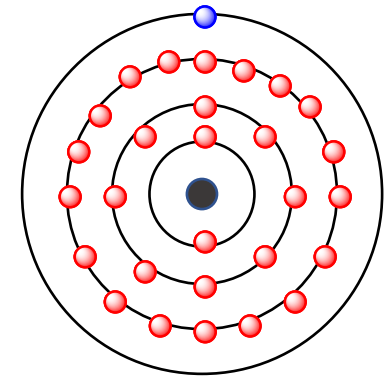
5*d*



5*f*



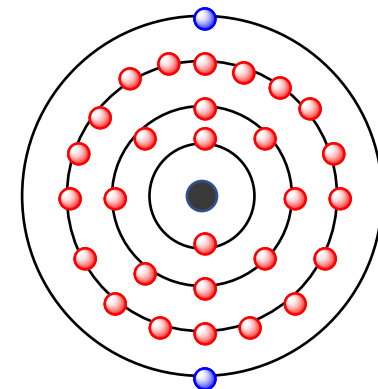
29Cu



主量子数
(n)

K	1	1s									
L	2	2s	2p								
M	3	3s	3p	3d							
N	4	4s	4p	4d			4f				
O	5	5s	5p	5d			5f				

30Zn



主量子数

(n)

K

1

1s



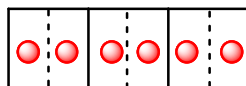
L

2

2s



2p



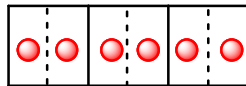
M

3

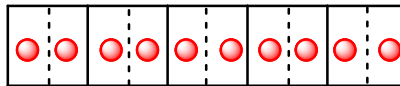
3s



3p



3d



N

4

4s



4p



4d



4f



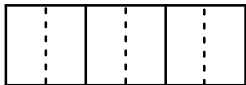
O

5

5s



5p



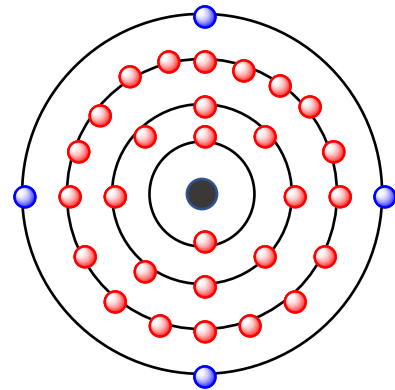
5d



5f



^{32}Ge



主量子数

(n)

K

1

1s



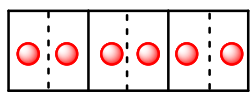
L

2

2s



2p



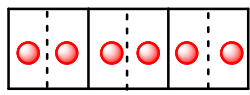
M

3

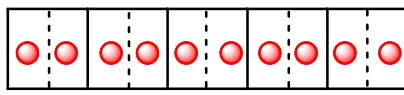
3s



3p



3d



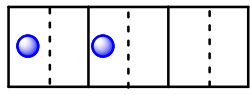
N

4

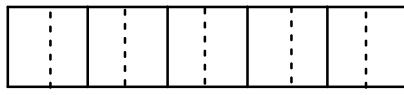
4s



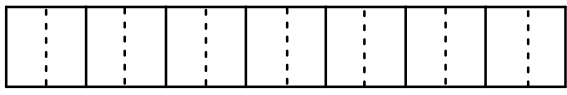
4p



4d



4f



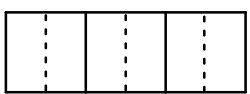
O

5

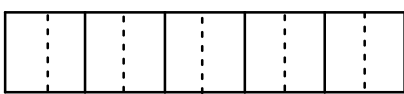
5s



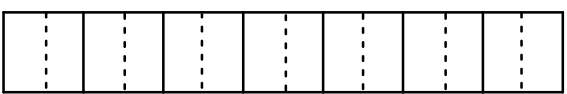
5p



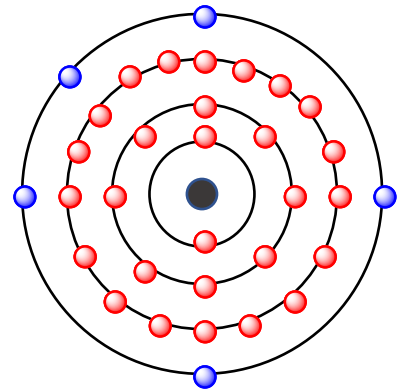
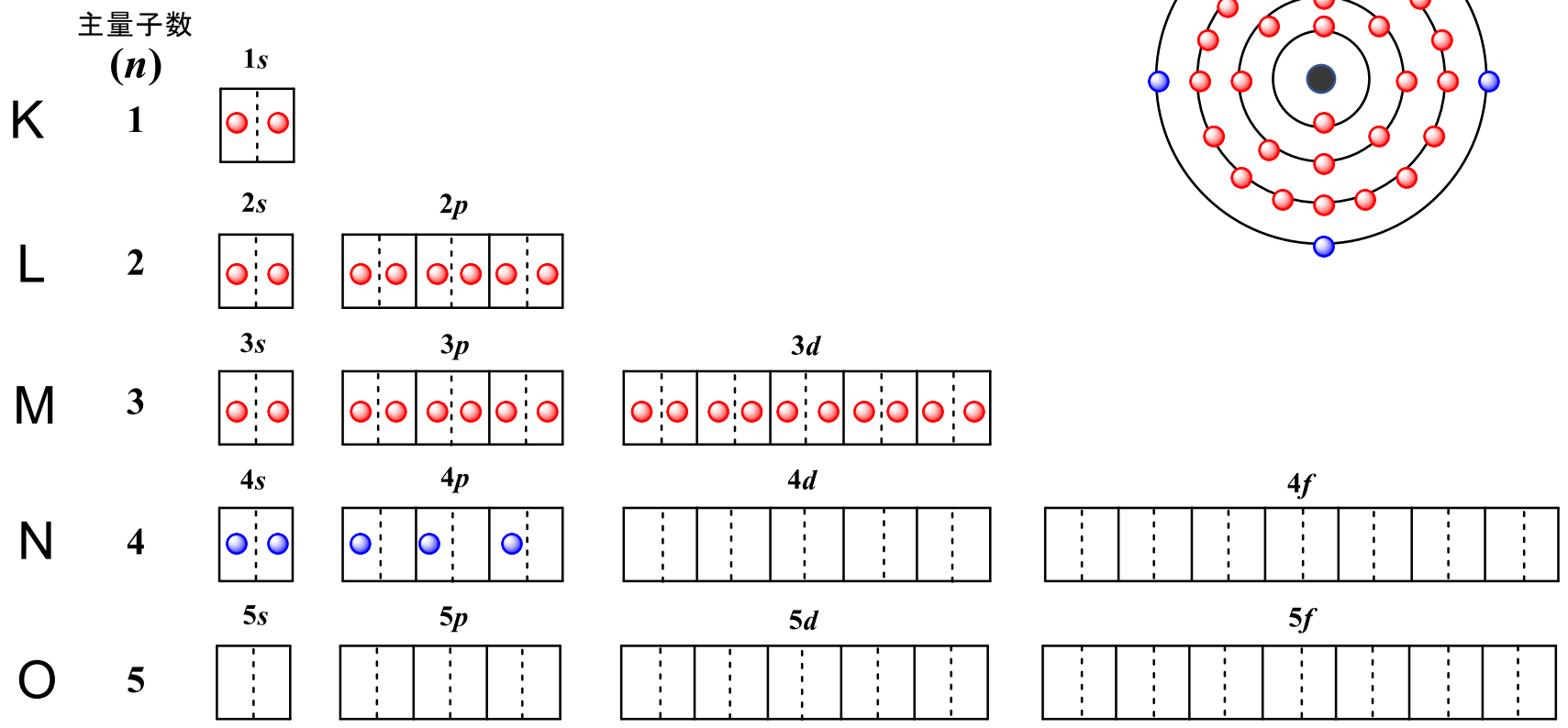
5d



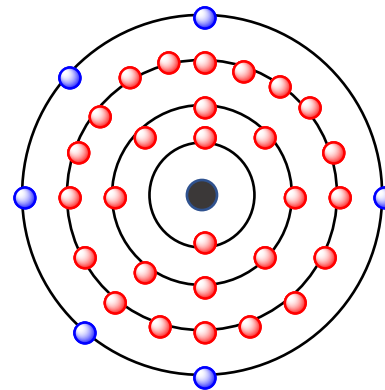
5f



33As



34Se



主量子数

(n)

K

1

1s



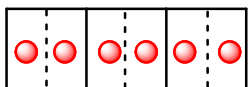
L

2

2s



2p



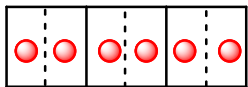
M

3

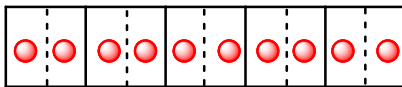
3s



3p



3d



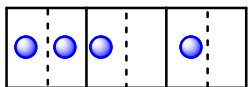
N

4

4s



4p



4d



4f



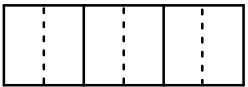
O

5

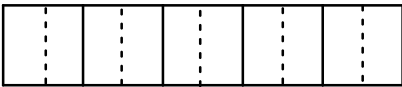
5s



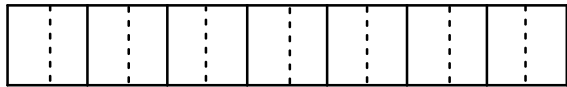
5p



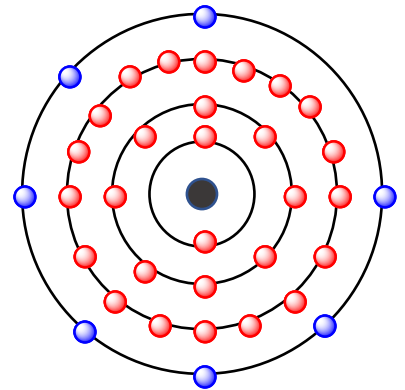
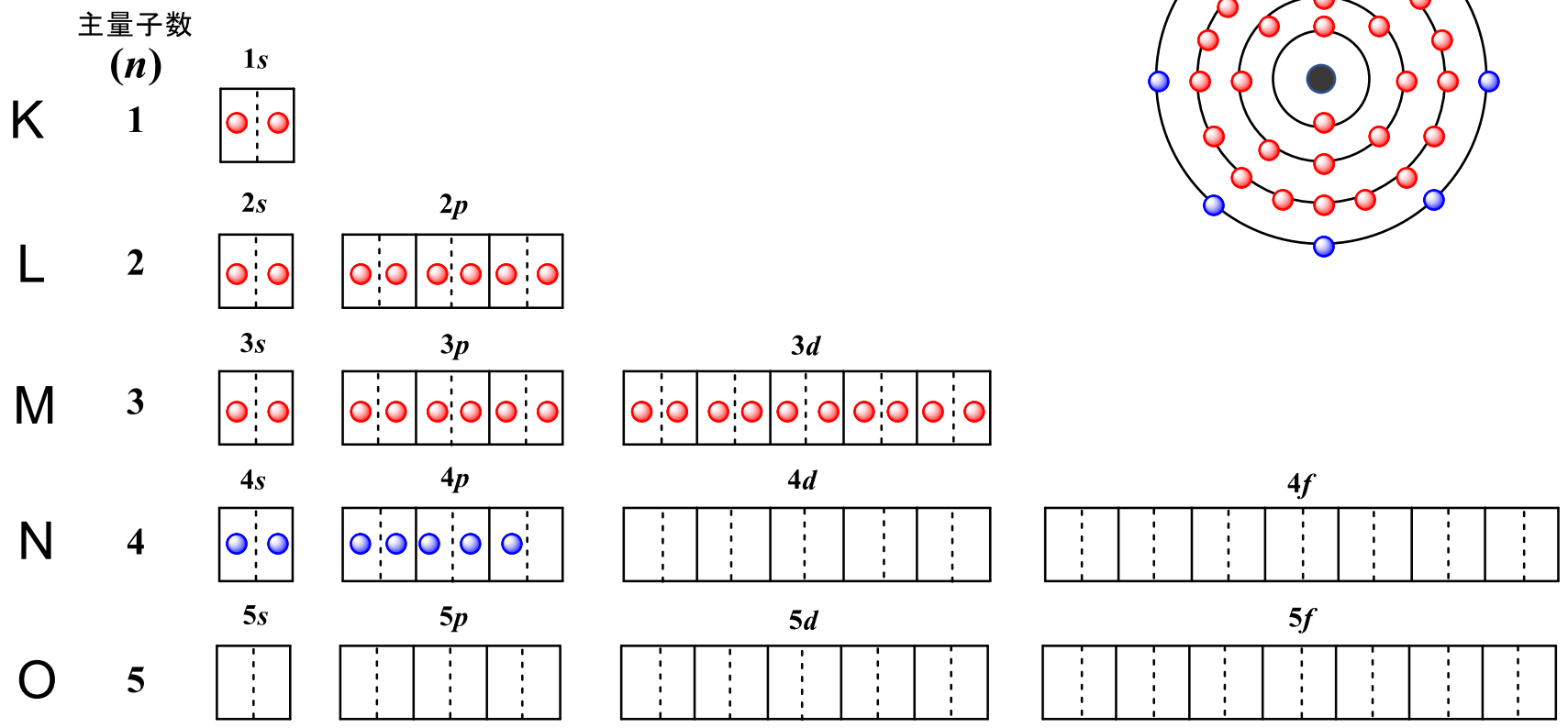
5d



5f

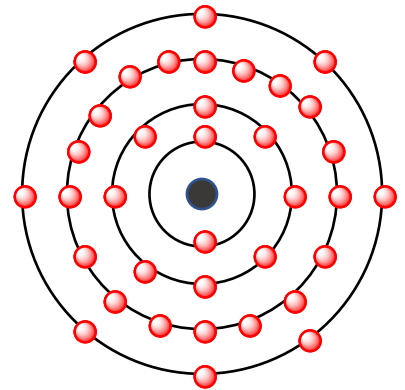


35Br



36 Kr

•

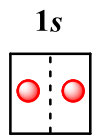


主量子数

(*n*)

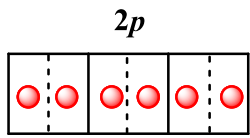
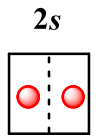
K

1



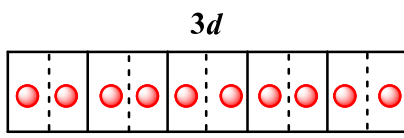
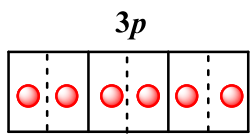
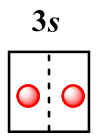
L

2



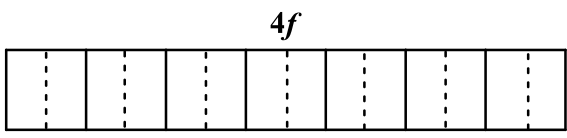
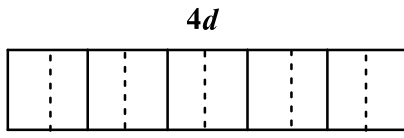
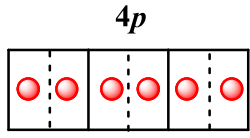
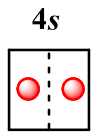
M

3



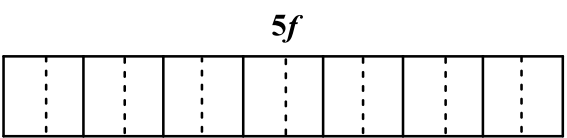
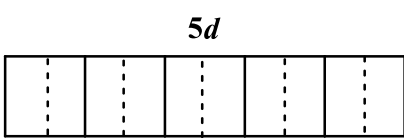
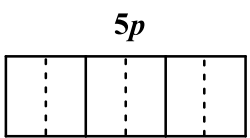
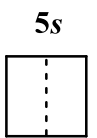
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4

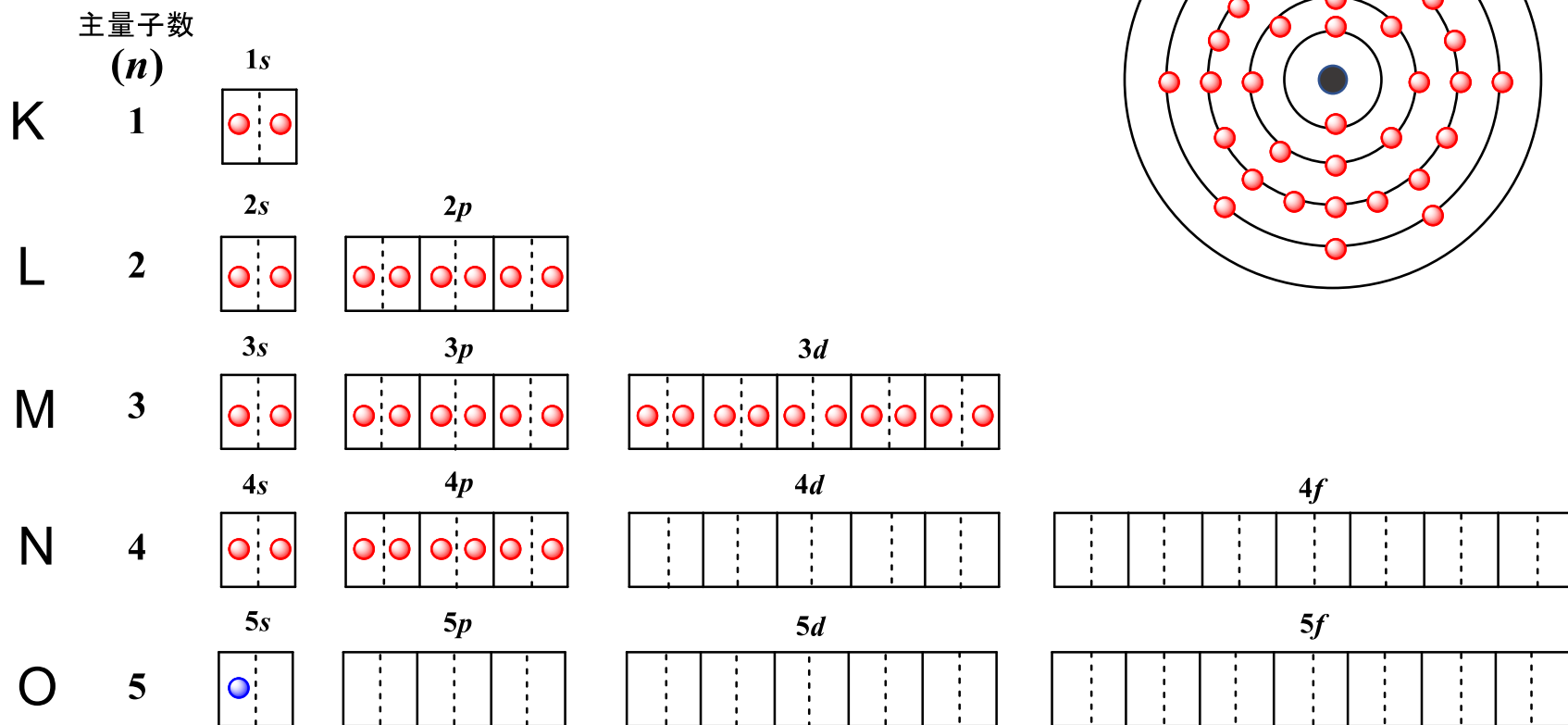


O

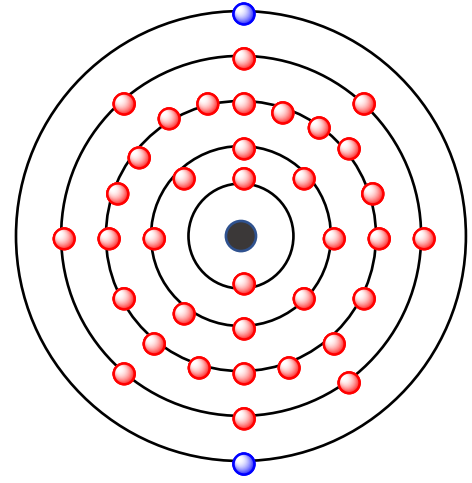
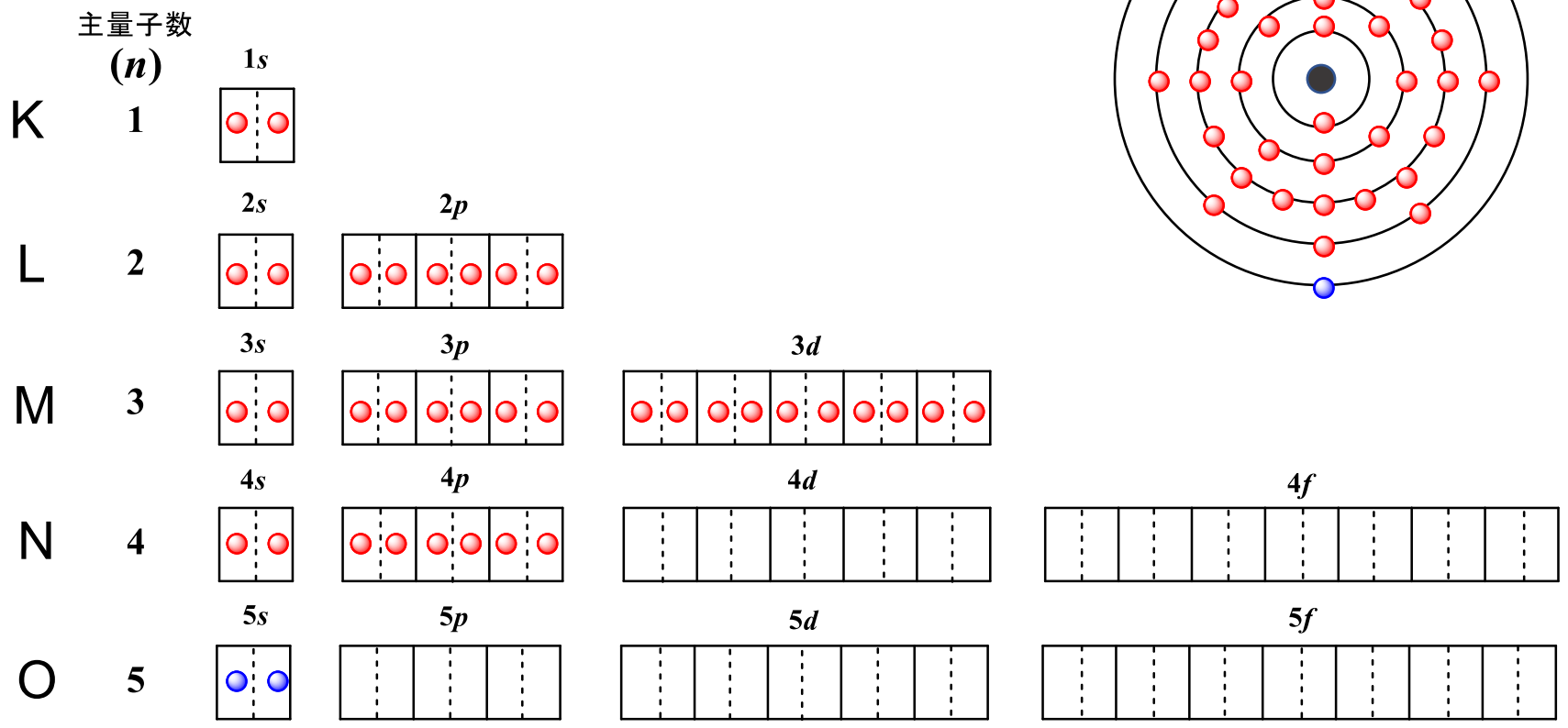
5



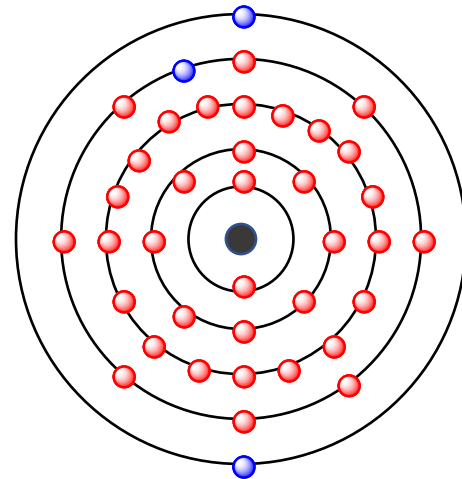
37Rb



38Sr



39 Y

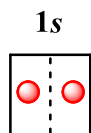


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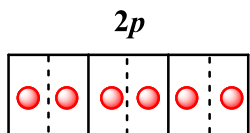
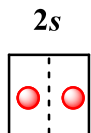
K

1



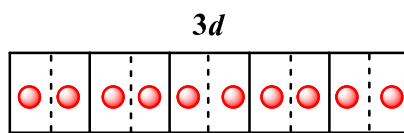
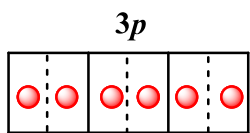
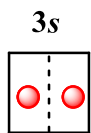
L

2



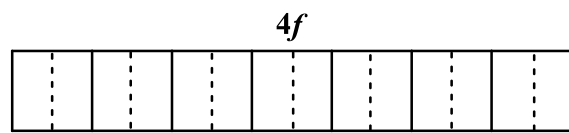
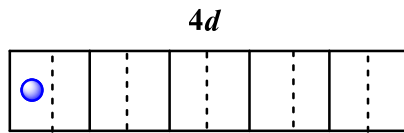
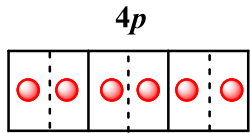
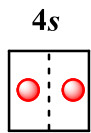
M

3



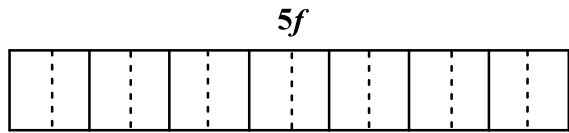
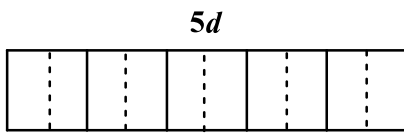
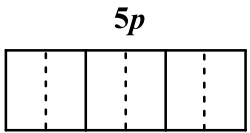
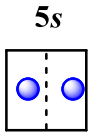
N

4

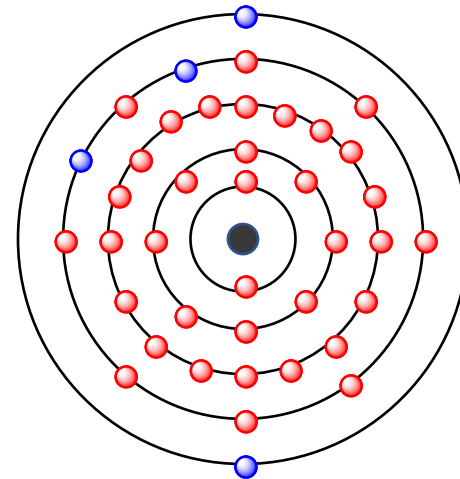


O

5



40Zr



主量子数

(n)

K

1

1s



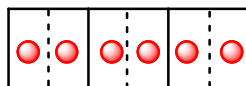
L

2

2s



2p



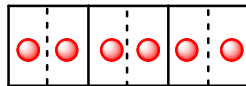
M

3

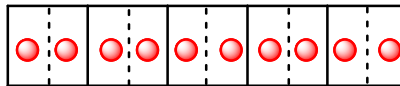
3s



3p



3d



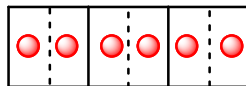
N

4

4s



4p



4d



4f



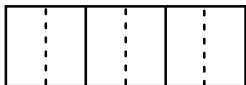
O

5

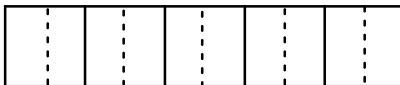
5s



5p



5d

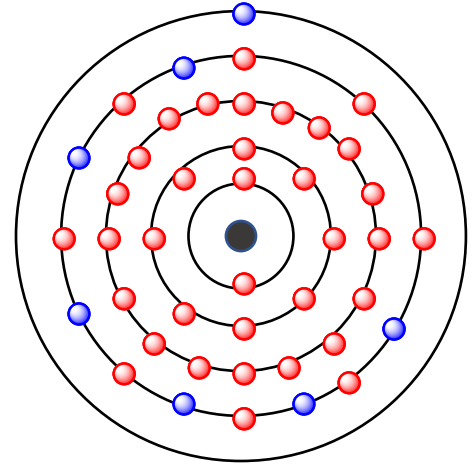


5f



43 Tc

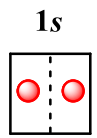
例外



主量子数
(*n*)

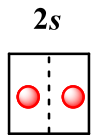
K

1

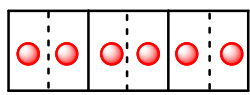


L

2

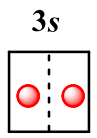


2*p*

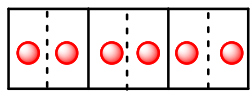


M

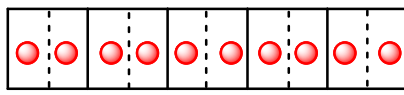
3



3*p*

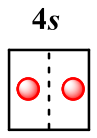


3*d*

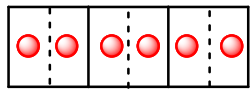


N

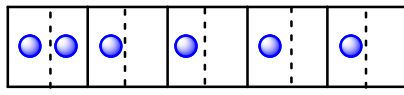
4



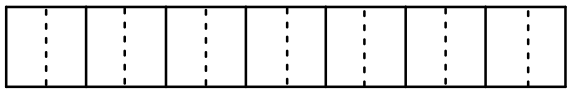
4*p*



4*d*

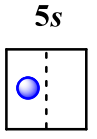


4*f*

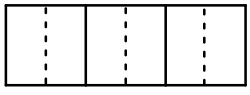


O

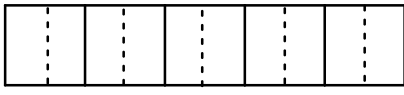
5



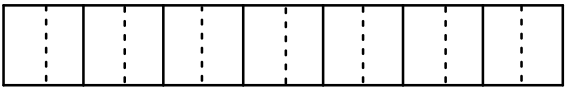
5*p*



5*d*

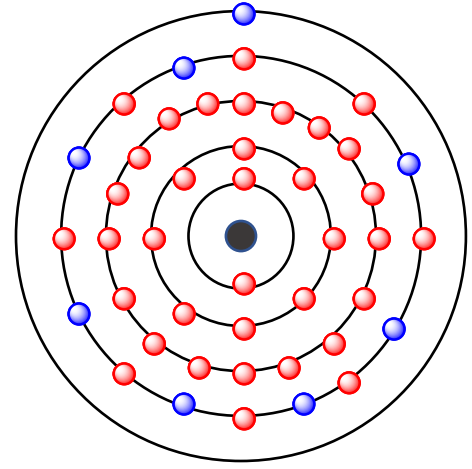


5*f*



44Ru

例外

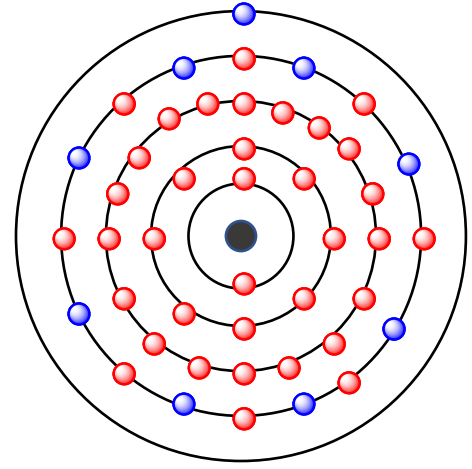


主量子数
(*n*)

K	1	1s																		
L	2	2s	2p																	
M	3	3s	3p	3d																
N	4	4s	4p	4d	4f															
O	5	5s	5p	5d	5f															

45Rh

例外

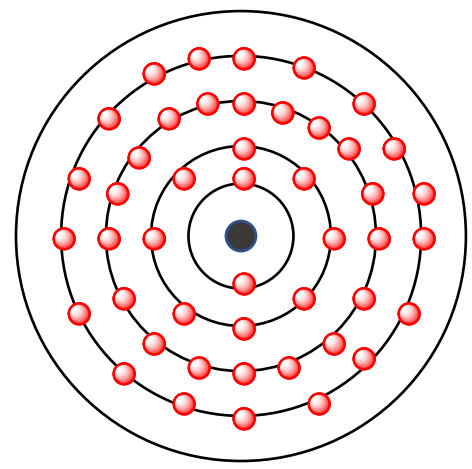


主量子数
(*n*)

K	1	1s																	
L	2	2s	2p																
M	3	3s	3p	3d															
N	4	4s	4p	4d	4f														
O	5	5s	5p	5d	5f														

46Pd

例外



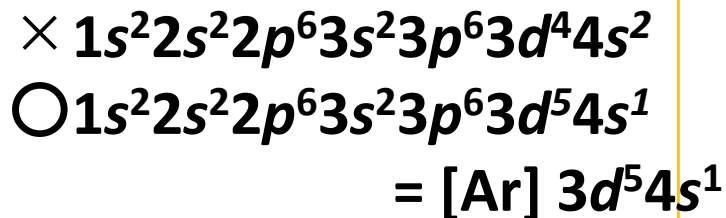
主量子数
(*n*)

K	1	1s												
L	2	2s	2p											
M	3	3s	3p	3d										
N	4	4s	4p	4d	4f									
O	5	5s	5p	5d	5f									

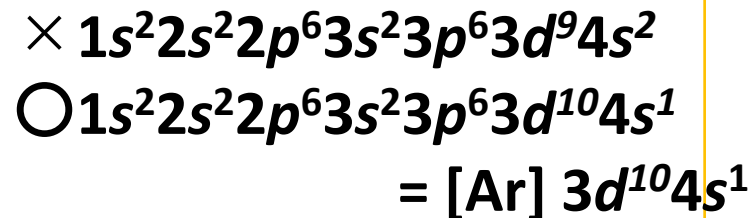
閉殻

構成原理の例外 (第4周期)

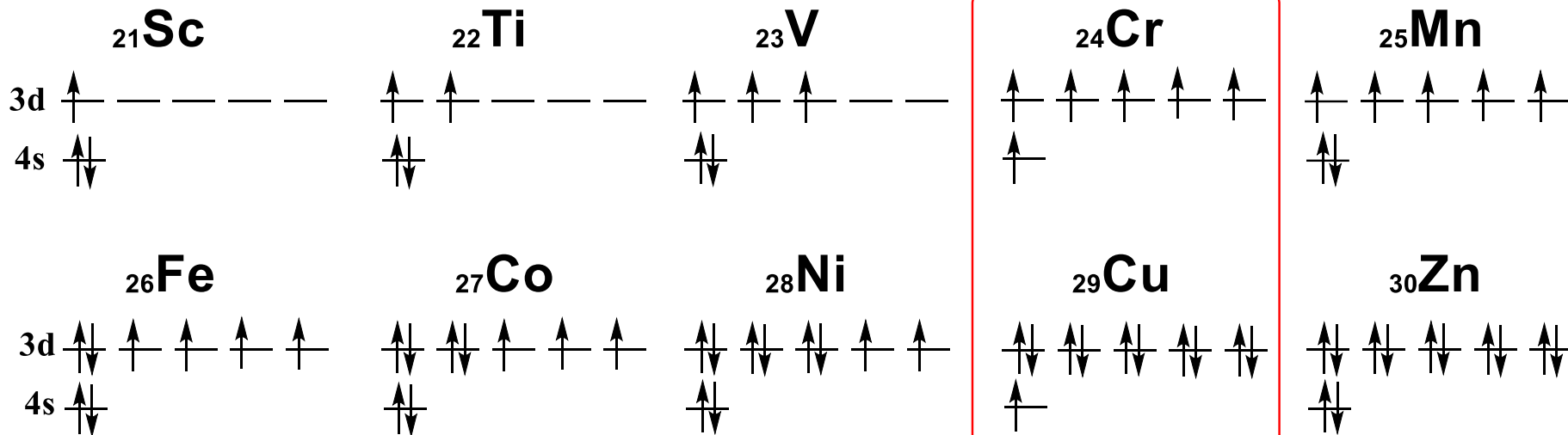
${}_{24}\text{Cr}$



${}_{29}\text{Cu}$



3d軌道が半閉殻



3d軌道が閉殻

