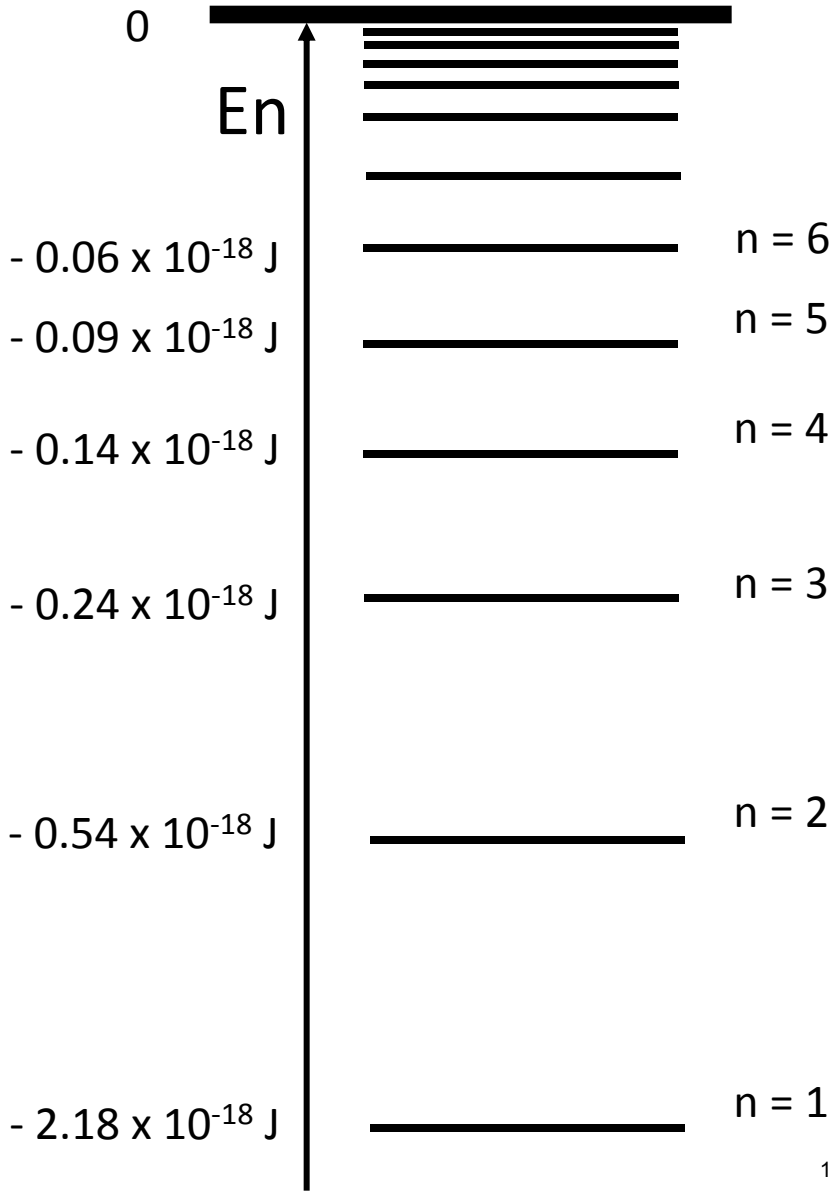
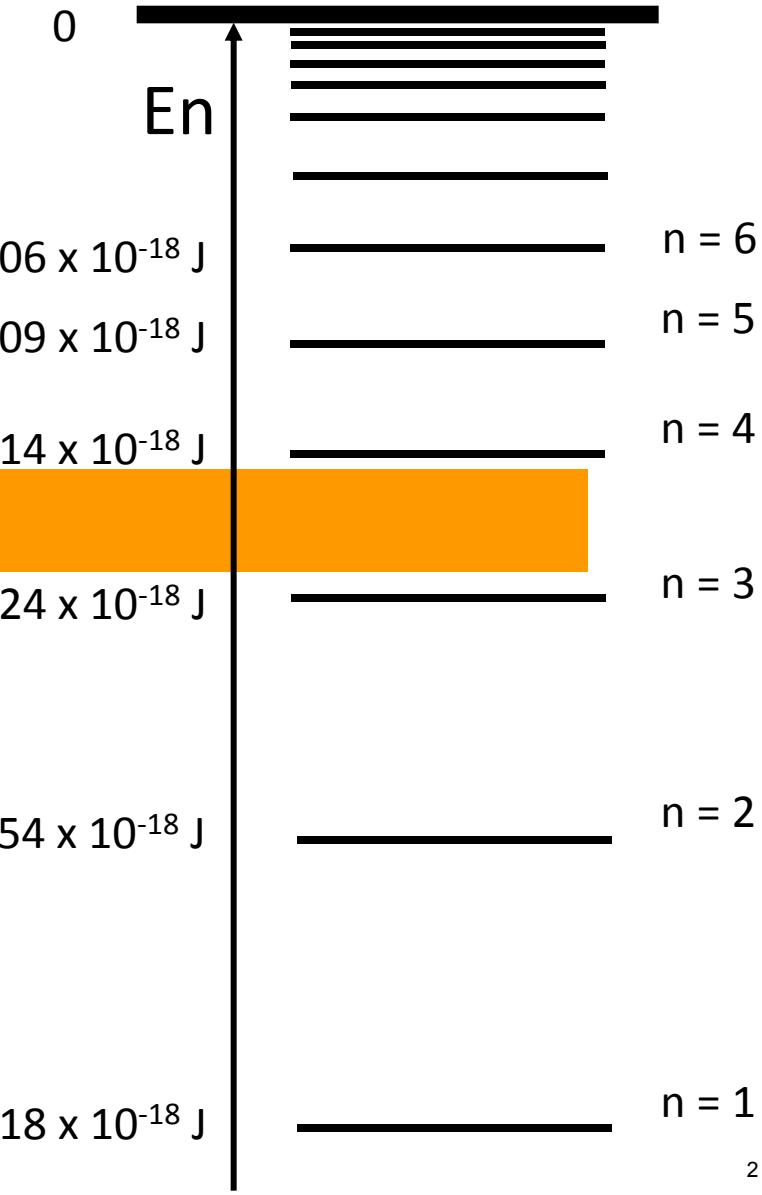
What is the IE of a hydrogen atom in the 4th excited state?

1. -0.06×10^{-18} J
2. 0.06×10^{-18} J
3. -0.09×10^{-18} J
4. 0.09×10^{-18} J
5. -0.14×10^{-18} J
6. 0.14×10^{-18} J
7. -0.24×10^{-18} J
8. 0.24×10^{-18} J
9. -0.54×10^{-18} J



What is the IE of a hydrogen atom in the 4th excited state?

2%	1. -0.06×10^{-18} J
2%	2. 0.06×10^{-18} J
7%	3. -0.09×10^{-18} J
80%	4. 0.09×10^{-18} J
2%	5. -0.14×10^{-18} J
4%	6. 0.14×10^{-18} J
0%	7. -0.24×10^{-18} J
1%	8. 0.24×10^{-18} J
0%	9. -0.54×10^{-18} J



What is the corresponding orbital for a 5,1,0 state?

1. 1s
2. 5s
3. $5p_x$
4. $5p_y$
5. $5p_z$
6. $5d_{xy}$
7. $5d_z$

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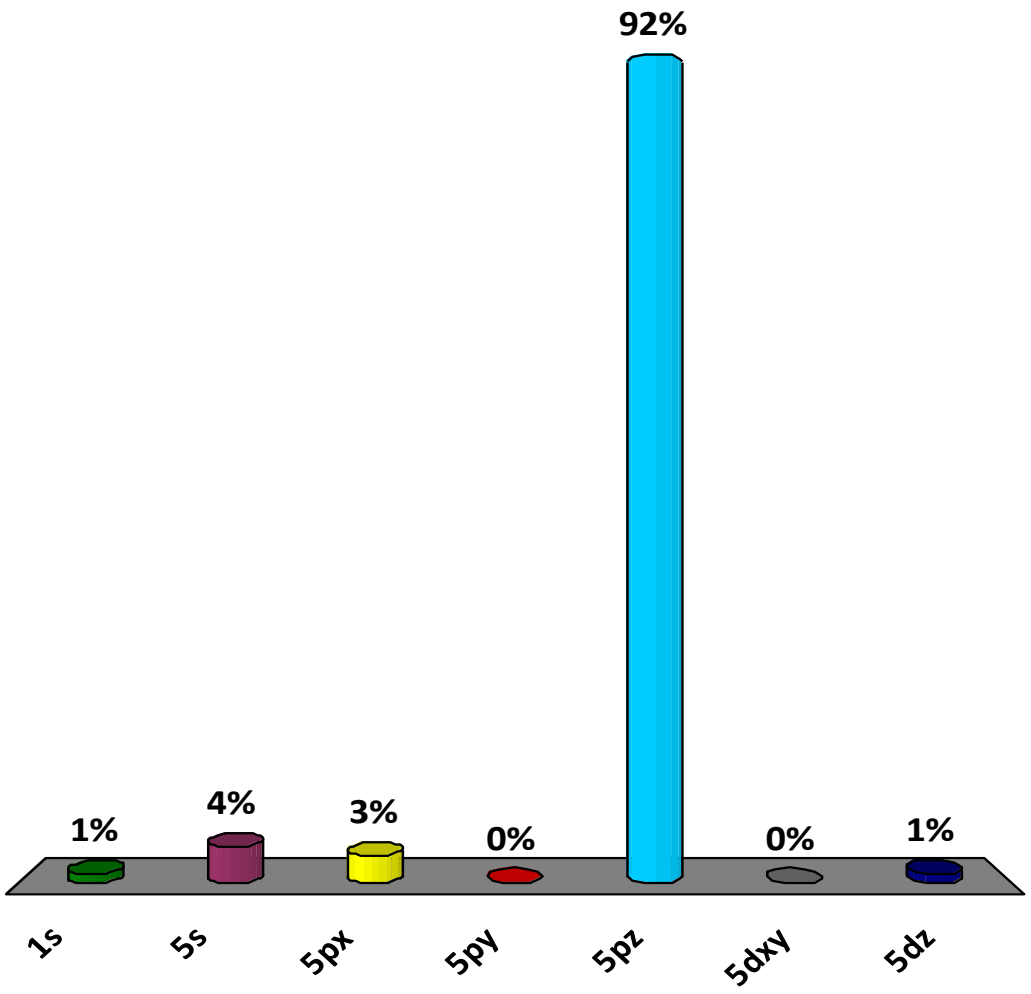

How many **radial nodes** does a 4p orbital have?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 0

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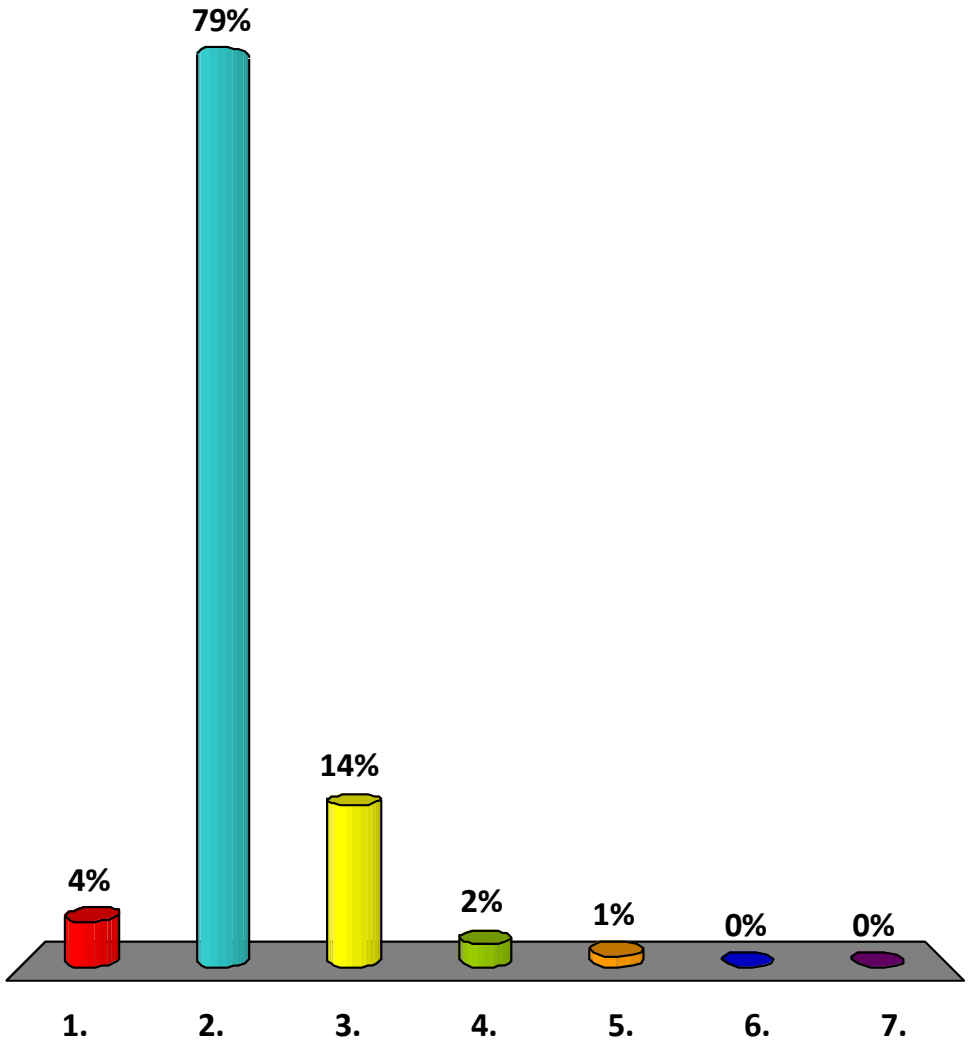
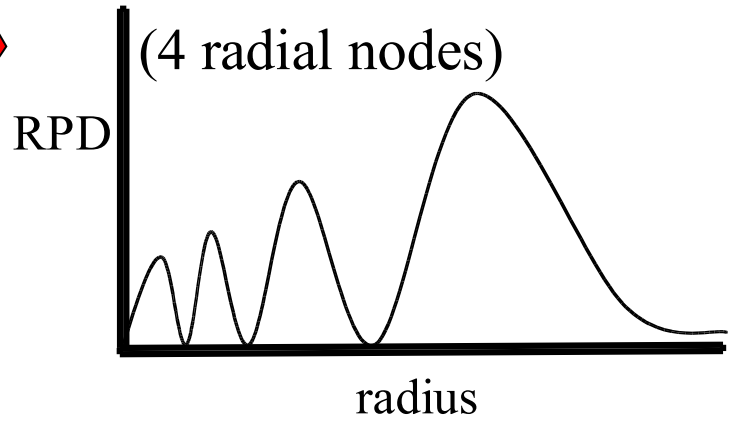
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 0

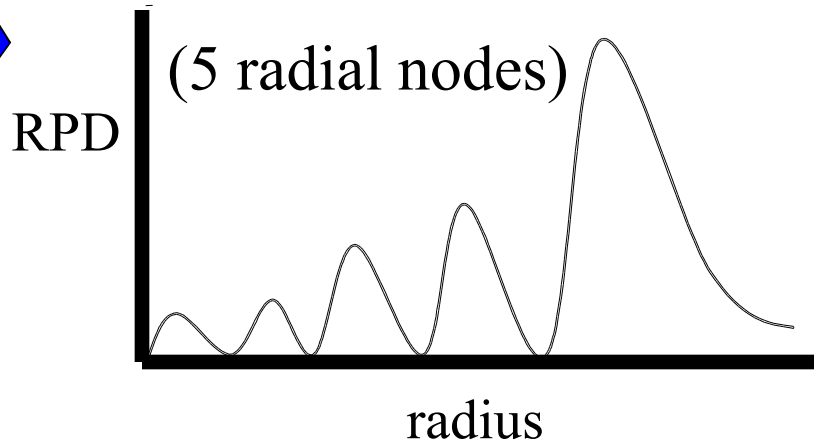


Identify the correct RPD plot (and radial node number) for a 5s orbital:

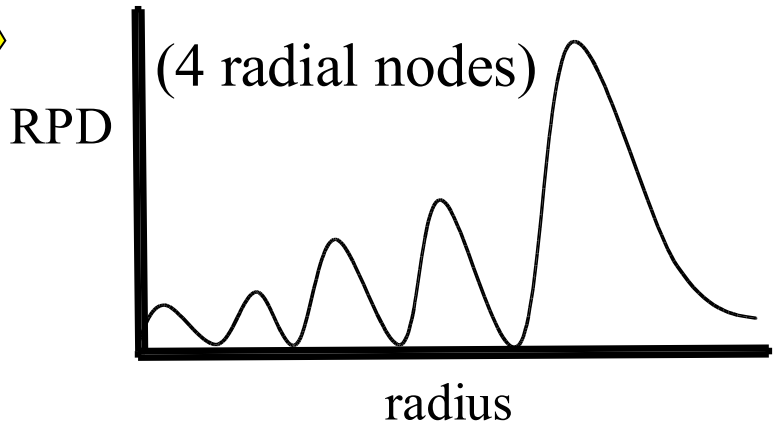
1.



2.



3.



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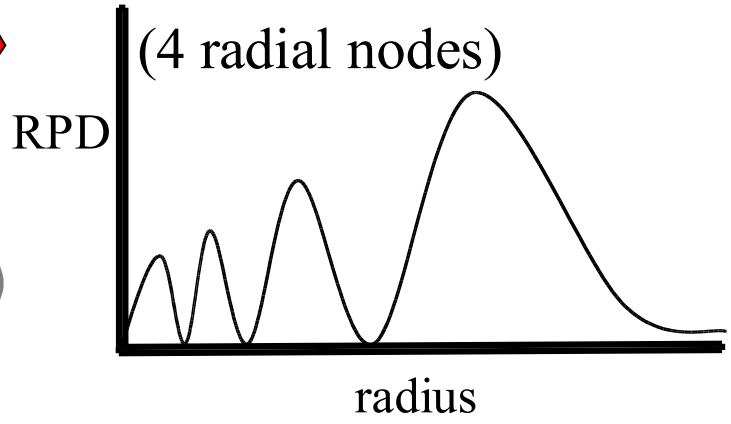
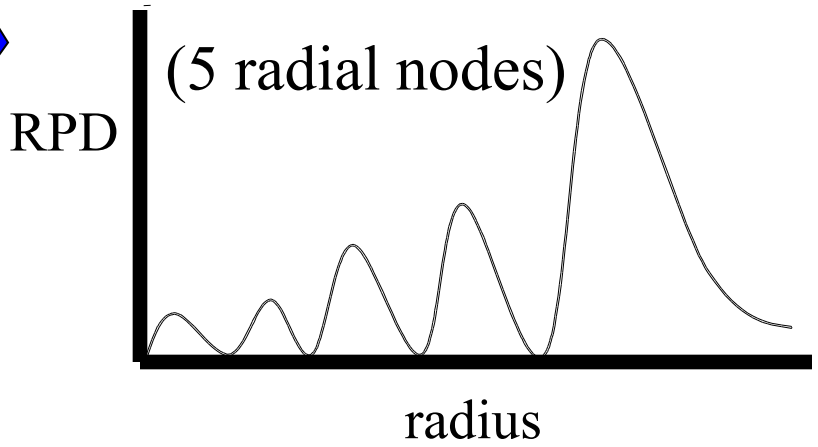
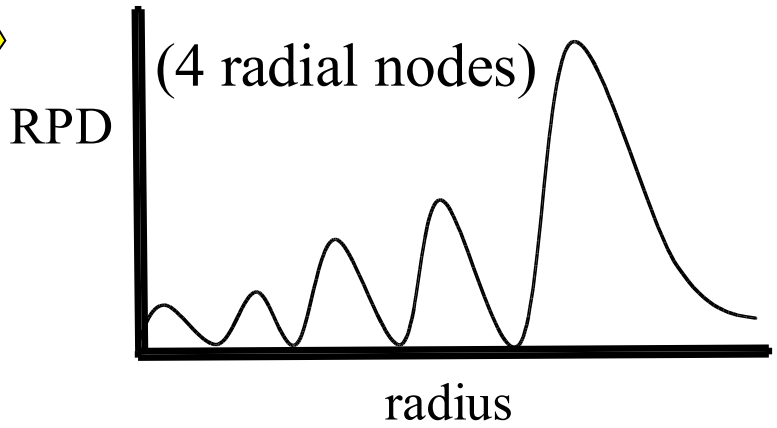
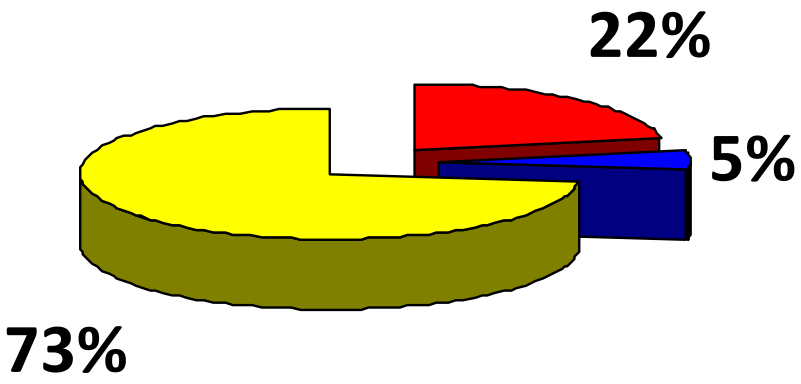


2.



3.





How many **radial nodes** does a hydrogen atom 3d orbital have?

1. One
2. Two
3. Three
4. Four
5. Five
6. Six
7. Seven
8. Eight
9. Zero

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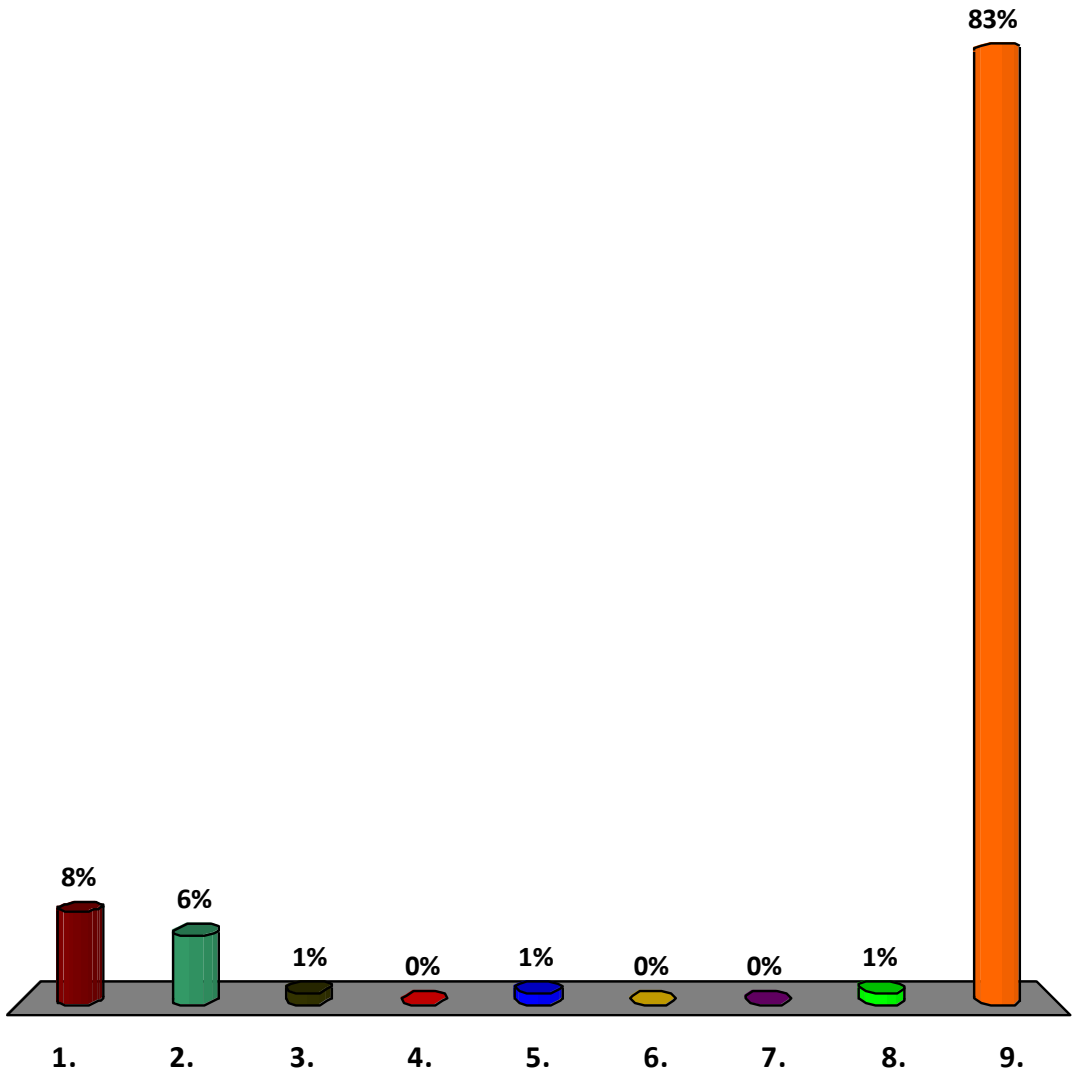

5.111 Principles of Chemical Science
Fall 2014