

What are the bond angles in PH_3 ?
(P has 5 valence electrons.)

1. 120°
2. $< 120^\circ$
3. 109.5°
4. $< 109.5^\circ$
5. 90°
6. $< 90^\circ$

What are the bond angles in PH_3 ?
(P has 5 valence electrons.)

12% 1. 120°

19% 2. $< 120^\circ$

3% 3. 109.5°

55%  4. $< 109.5^\circ$

3% 5. 90°

9% 6. $< 90^\circ$

Fill in the blank

An electron in a bonding MO will be attracted to BOTH nuclei, and will be _____ compared to an atomic orbital for a single nuclei.

1. higher in energy
2. no different in energy (energy is conserved).
3. lower in energy

Fill in the blank

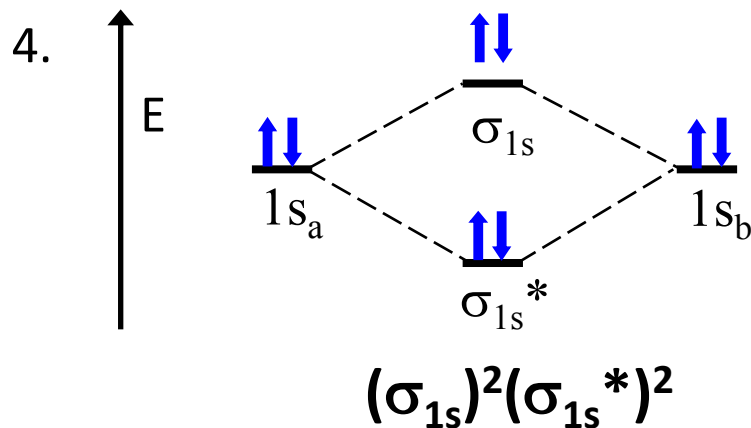
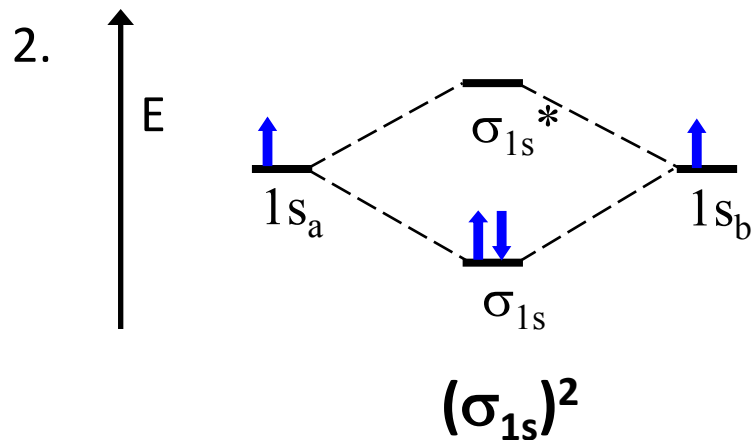
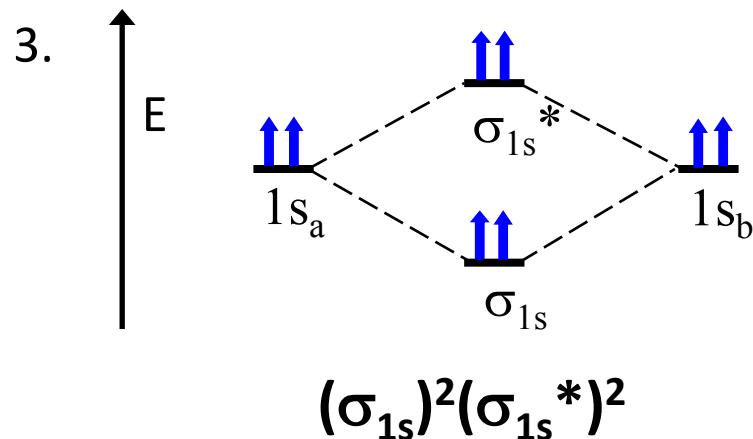
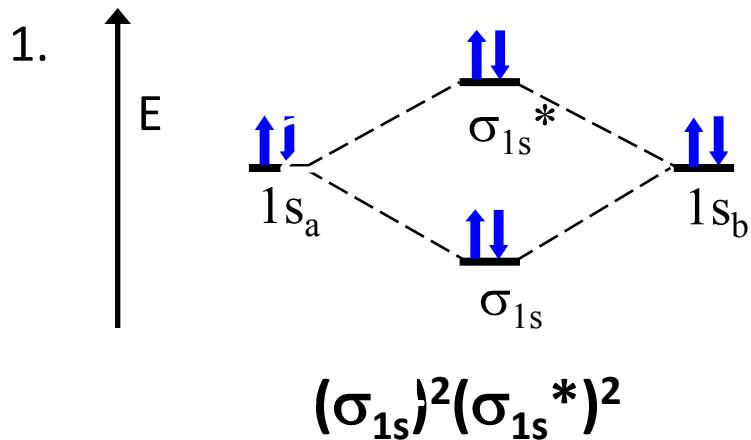
An electron in a bonding MO will be attracted to BOTH nuclei, and will be _____ compared to an atomic orbital for a single nuclei.

49% 1. higher in energy

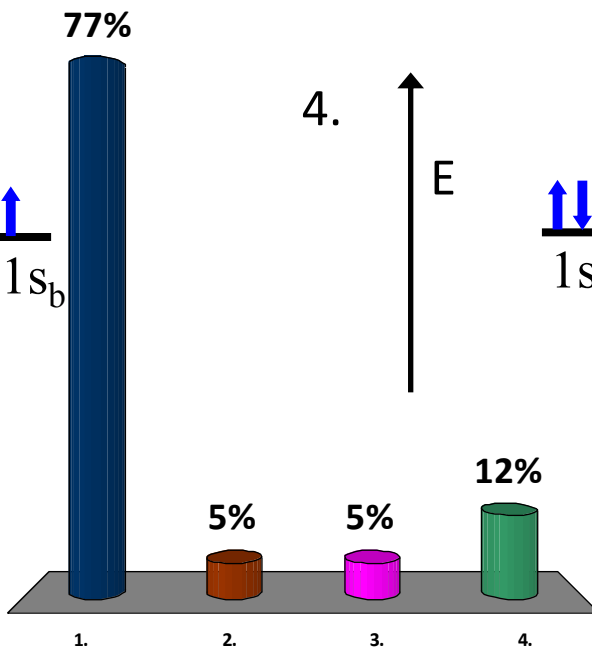
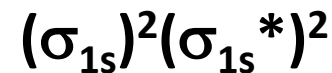
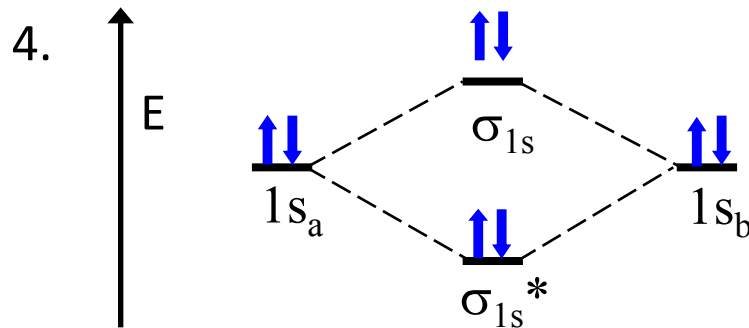
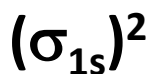
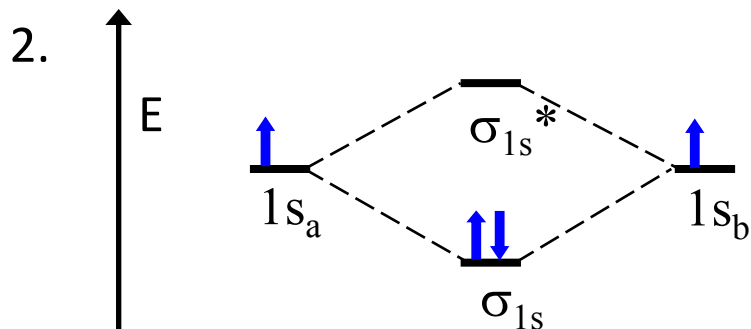
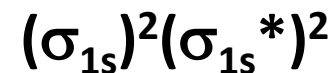
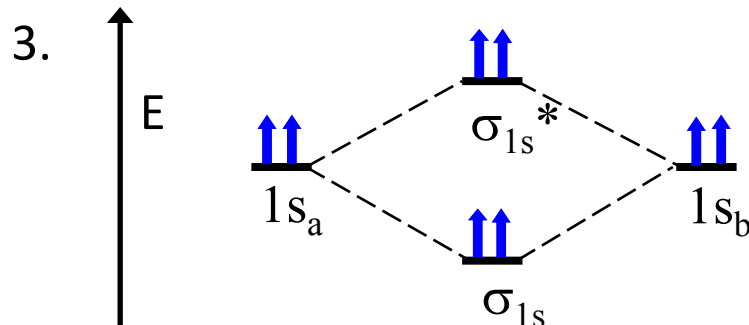
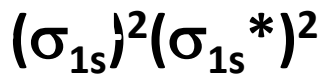
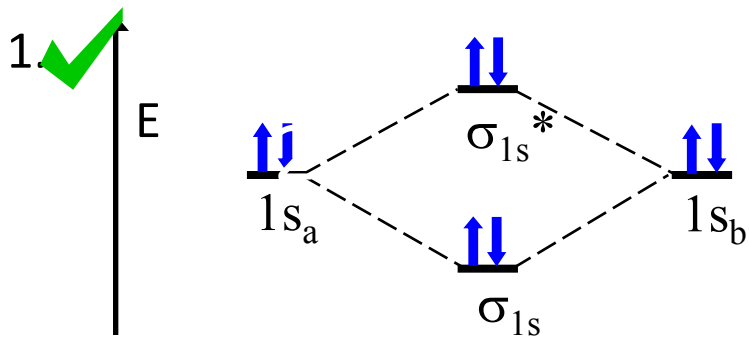
9% 2. no different in energy (energy is conserved).

42% 😊 3. lower in energy

Pick the correct answer for the MO diagram of He₂



Pick the correct answer for the MO diagram of He₂



Determine the BO for Li_2 .

1. 0

2. 0.5

3. 1

4. 1.5

5. 2

6. 2.5

7. 3

Determine the BO for Li_2 .

4%

1. 0

4%

2. 0.5

84%



3. 1

3%

4. 1.5

5%

5. 2

0%

6. 2.5

0%

7. 3

Fill in the C_2 MO diagram and pick the correct statement

1. Electron configuration is $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\pi_{2px})^2 (\pi_{2py})^2$ and bond order is 2.
2. Electron configuration is $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\pi_{2px})^2 (\pi_{2py})^2$ and bond order is 0.
3. Electron configuration is $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\pi_{2px})^2 (\pi_{2px}^*)^2$ and bond order is 2.
4. Electron configuration is $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\pi_{2px})^2 (\pi_{2px}^*)^2$ and bond order is 0.

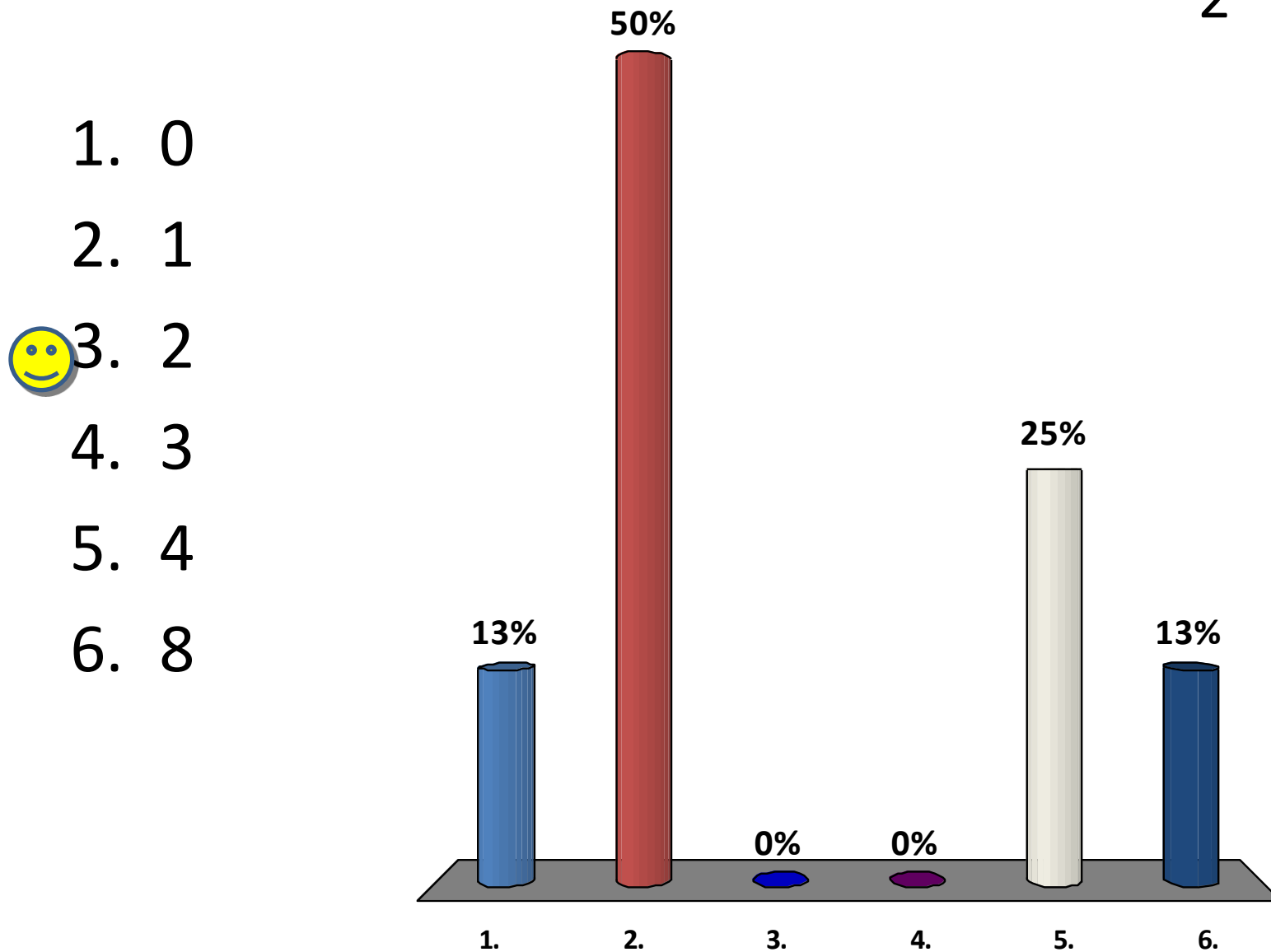
Fill in the C₂ MO diagram and pick the correct statement

- 78% 1. ✓ Electron configuration is $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\pi_{2px})^2 (\pi_{2py})^2$ and bond order is 2.
- 11% 2. Electron configuration is $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\pi_{2px})^2 (\pi_{2py})^2$ and bond order is 0.
- 8% 3. Electron configuration is $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\pi_{2px})^2 (\pi_{2px}^*)^2$ and bond order is 2.
- 3% 4. Electron configuration is $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\pi_{2px})^2 (\pi_{2px}^*)^2$ and bond order is 0.

What is the bond order for O₂?

1. 0
2. 1
3. 2
4. 3
5. 4
6. 8

What is the bond order for O₂?



MIT OpenCourseWare
<http://ocw.mit.edu>

5.111 Principles of Chemical Science
Fall 2014

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.