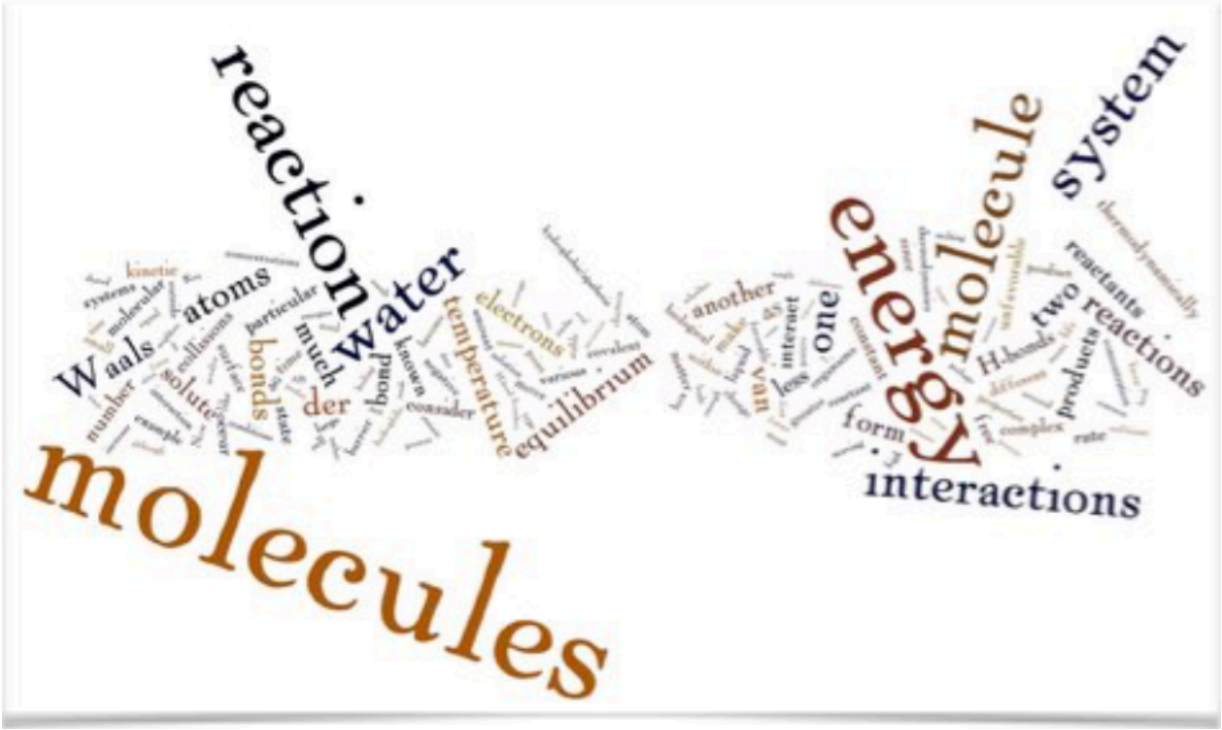
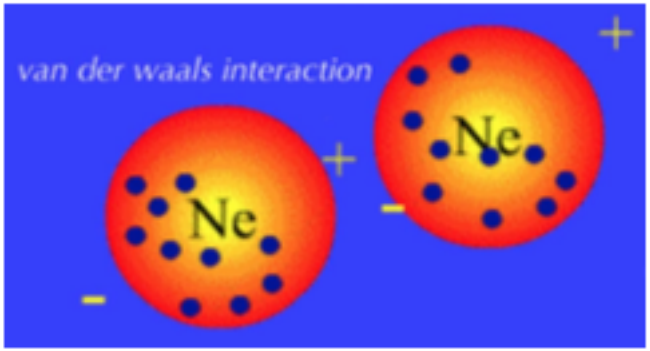


previously: thermodynamics and reactions

next: intra- and inter-molecular interactions

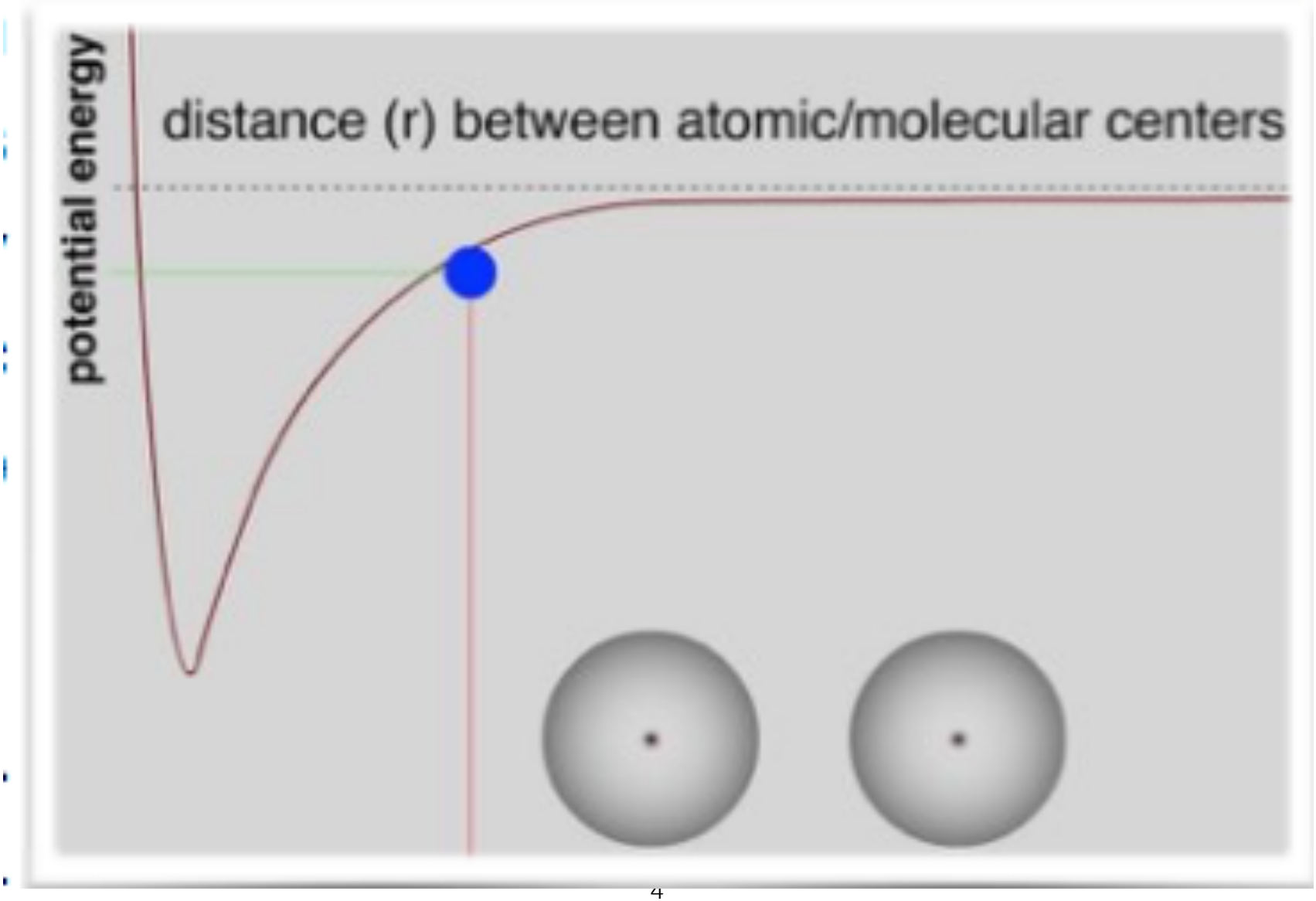
course web site

How do van der Waals interactions arise: draw a model over time.



How does the energy between molecules (atoms) change as a function of distance?

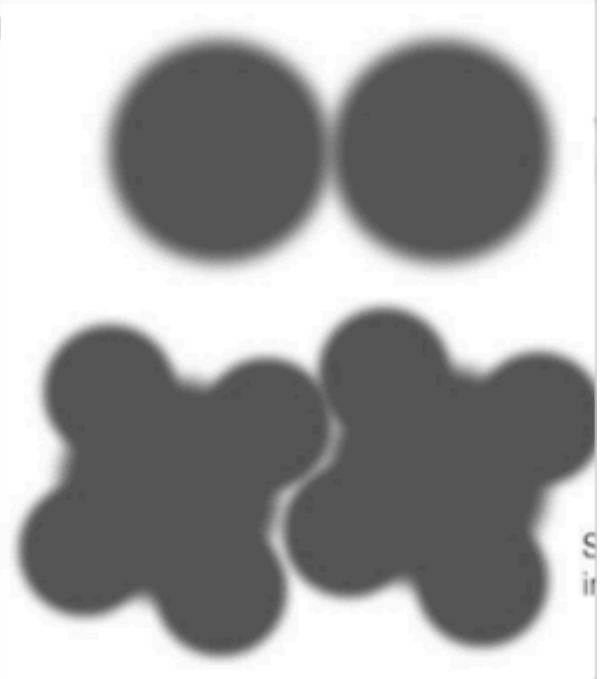
How does the energy between molecules (atoms) change as a function of distance?



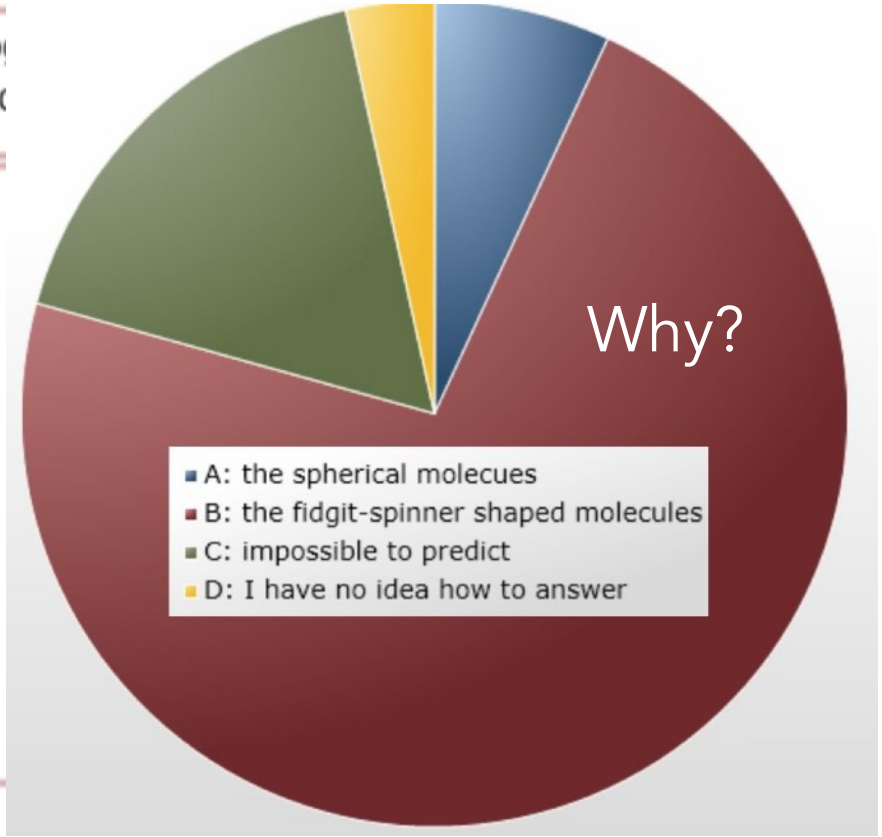
How does the shape of a molecule influence the interactions between molecules?

Predict which of these compounds has higher melting and boiling points:

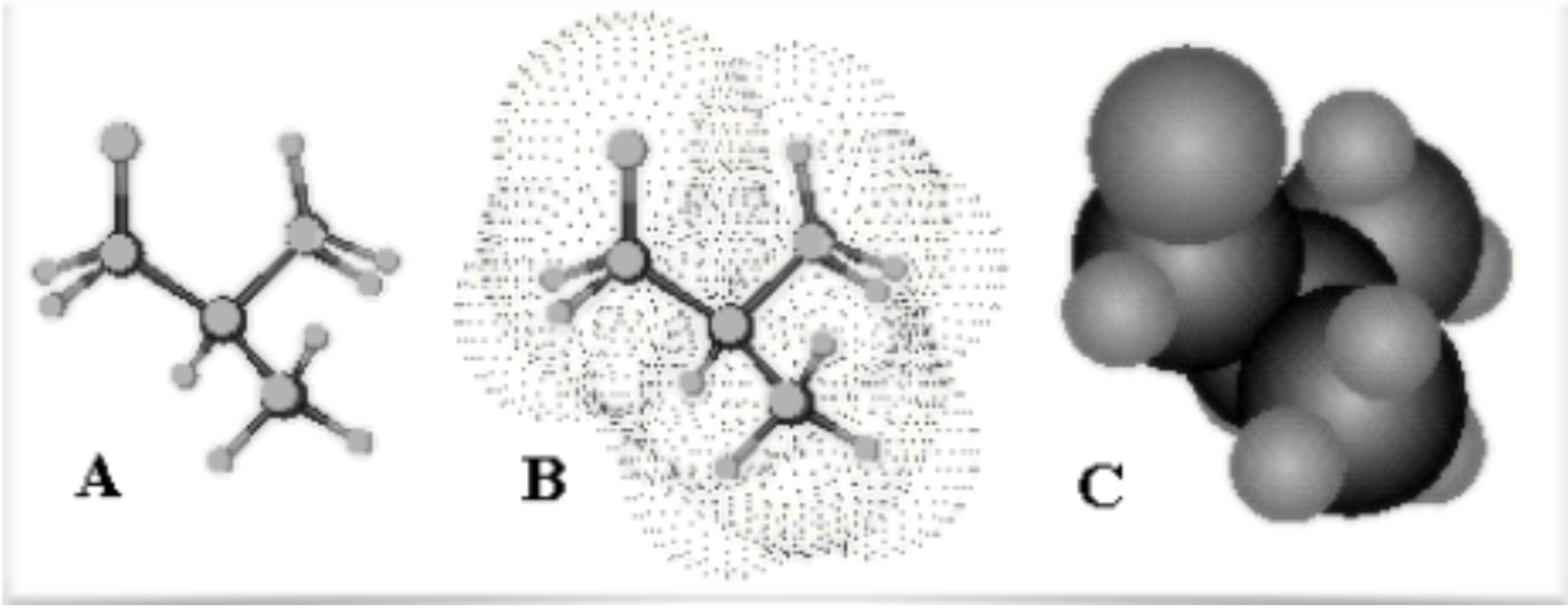
- A: the spherical molecues
- B: the fidgit-spinner shaped molecules
- C: impossible to predict
- D: I have no idea how to answer



explain the lo
be solid, liqui



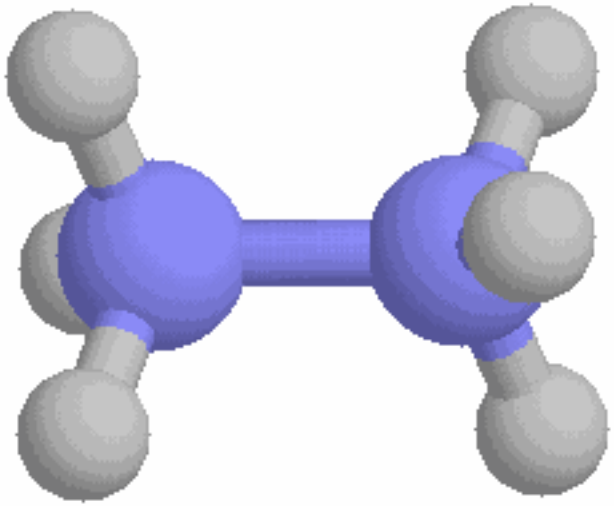
Which is the most realistic view of a molecule?



PHET applet

how does temperature influence molecular motions?

consider intra- and inter-molecular behaviors



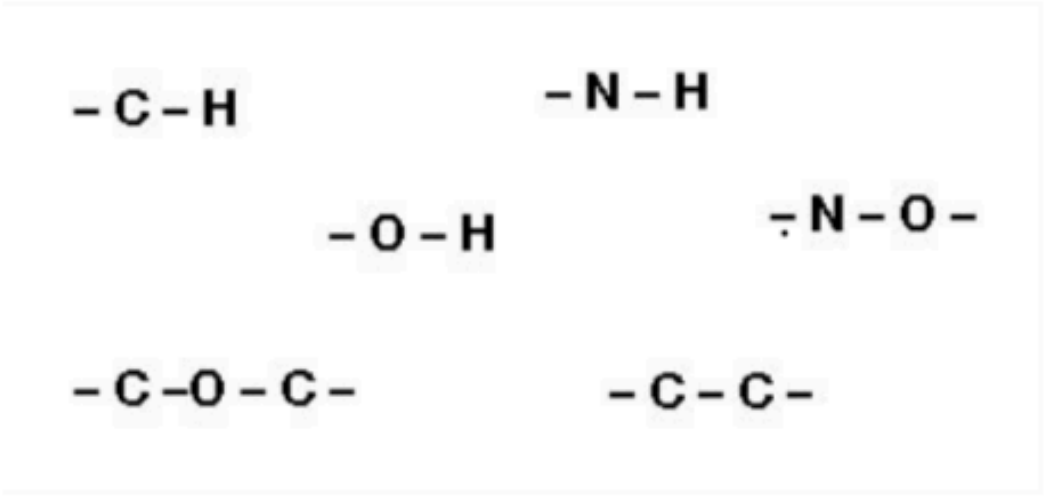
does the electronegativities (phet sim) of two atoms in a bond influence intermolecular interactions?

For which elements do we need to remember relative electronegativities?

As I change temperature of the system, which (atom-atom and molecule-molecule) interactions break first and which last?

How are interactions involving polarized bonds different from van der Waals interactions?

Here are some bonded atoms (taken out of their molecular context; circle those that can take part in H-bonds with neighboring molecules.



for those that you did not circle, explain why

Draw | Erase | Reset

Atoms differ in their electronegativities. When atoms of sufficiently different electronegativities form a bond, that bond is electrically polarized. Polarized bonds can interact with one another, interactions that are generally directional and stronger than van der Waals interactions.
Draw a molecule of methanol (CH3-OH) and water (H2O) and indicate they might interact.

Draw | Erase | ✕Reset

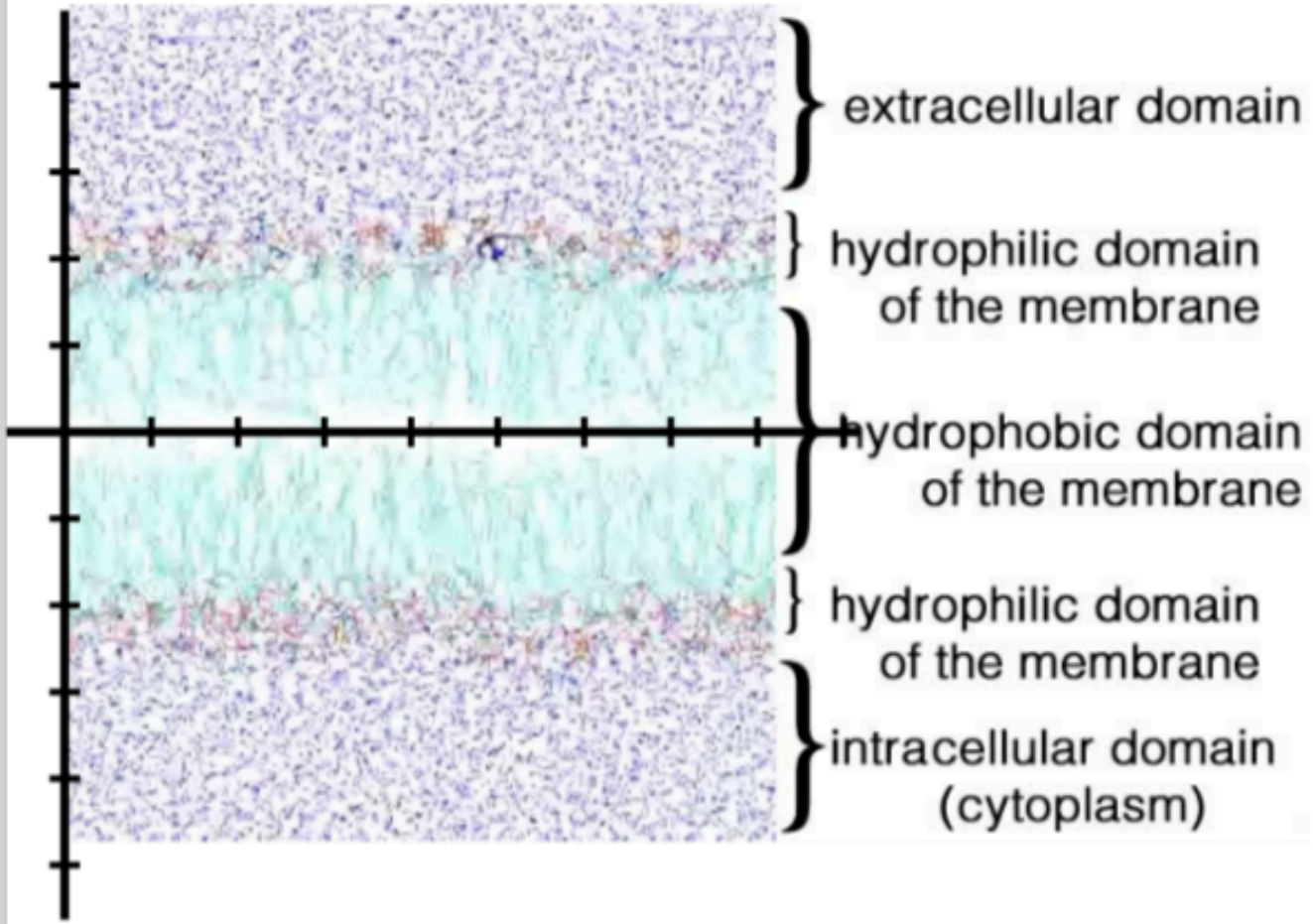
How do water molecules interact with one another?

How does presence of interactions involving polarized bonds influence a compound's physical properties.

graph melting/boiling pt. all vdW, vdW+polar bonds

How do water molecules interact with a non-polar molecule (that is, a molecular that does not have polarized bonds)?

Hydrophobic molecules cannot make H-bonds with one another or with water molecules. Using this diagram as a basis, draw a graph of force needed to move a water molecule from the extracelular to the intracellular domain.

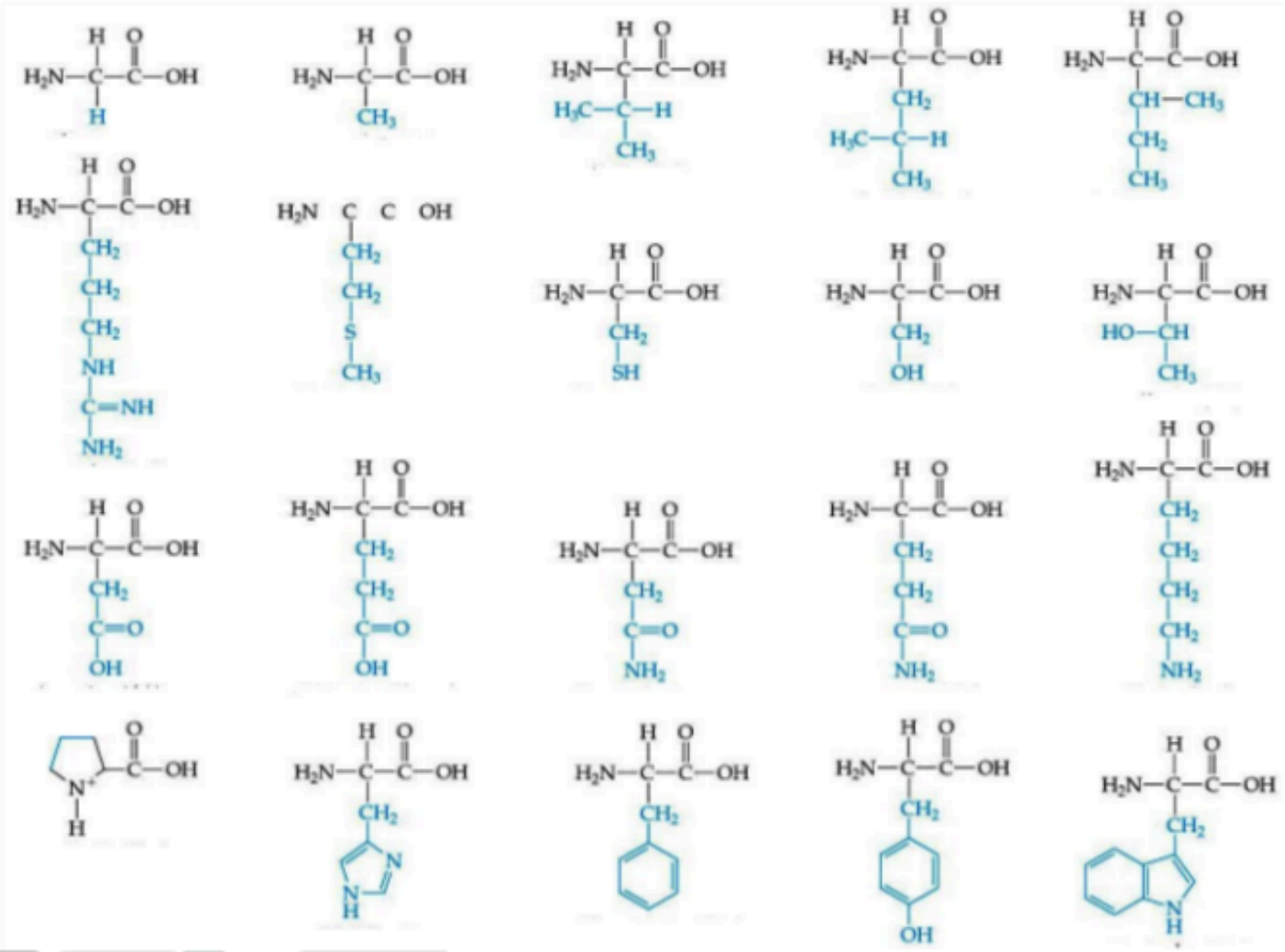


explain the logic of your graph

Draw | Adjust | Erase | Reset

How does one answer this?

Circle the **regions** of these molecules that are primarily hydrophobic.



Draw | Erase | Reset

page 8 of 8

Wed. 11 Oct.	Chapter 6.1 Membranes and capturing energy	126-135	**Complete** beSocratic #16
Friday 13 Oct.	Chapter 6.2 Membranes and capturing energy	135-139	**Complete** beSocratic #17
Monday 16 Oct.	Chapter 6.3 Membranes and capturing energy	139-144	**Complete** beSocratic #18
Wed. 18 Oct.	Chapter 6.4 Membranes and capturing energy	144-150	**Complete** beSocratic #19
Friday 20 Oct.	**REVIEW for midterm #2**		previous midterm
Monday 23 Oct.	**second midterm exam**		exam answers