

$$\sqrt{16} + \sqrt{14} = \sqrt{30}$$

1. The 3 stronger bonds are: Covalent, ionic and Metallic
The 2 weaker bonds are: van der Waals and Hydrogen bonds
2. metals and non-metals.
3. 2 non-metals
4. Covalent compounds tend to be insoluble in water and soluble in alcohol. Ionic compounds tend to be soluble in water and insoluble in alcohol.
5. Polar Molecule: ammonia, water, etc.
Non-polar Molecule: fats, oil, magic sand
6. Covalent compounds have relatively low melting points and boiling points. Ionic compounds tend to have a high melting point and boiling point.
7. Polar molecules are generally able to dissolve in water (hydrophilic) due to the polar nature of water. (like dissolves like)
8. Most non-polar molecules are water insoluble (hydrophobic) at room temperature. However, many non-polar organic solvents, such as turpentine are able to dissolve non-polar substances.
9. a) Metallic bonding is the bonding within metals. It involves delocalized sharing of free electrons among a lattice of metal atoms. Thus, metallic bonds may be compared to molten salts.
- b) Explain choice, but covalent is answer

