

## Chemistry - Chapter 7 answers

7.2 Properties, Names & Formulas		
1		Acids and bases disassociate in water and release their ions. So acids release H <sup>+</sup> ions and bases release OH <sup>-</sup> . These charges in the water allow for electrical conduction.
2		<ul style="list-style-type: none"> <li>a) KOH - base</li> <li>b) HNO<sub>3</sub> - acid</li> <li>c) Barium <b>hydroxide</b> - base</li> <li>d) KHCO -</li> <li>e) Sodium hydrogen carbonate solution</li> </ul>
3		<ul style="list-style-type: none"> <li>a) Potassium hydroxide</li> <li>b) Nitric acid</li> <li>c) Ba(OH)<sub>2</sub></li> <li>d) .</li> <li>e) /</li> </ul>
4		The H <sup>+</sup> ion is what gives an acid its properties.
5		Most bases have a hydroxide ion (OH <sup>-</sup> ).
6		Vomiting empties stomach contents up the esophagus and through the mouth. This brings corrosive, acidic stomach contents where they shouldn't be. Your esophagus can be damaged by the acid as well as your teeth and mouth.
7.3 pH Scale		
2		Lemon juice = pH 2, milk of magnesium = pH 10, borax = pH 9
3		<ul style="list-style-type: none"> <li>a) pH 13 = highly basic,</li> <li>b) pH 6 = slightly acidic</li> <li>c) pH 1 = highly acidic</li> <li>d) pH of moisture on skin = highly acidic ??</li> <li>e) pH of ideal pool water = slightly basic</li> </ul>
4		Order of increasing acidity → stomach acid > tomatoes > black coffee > pure water (neutral) > baking soda > bleach
5		<ul style="list-style-type: none"> <li>a) Removing heavy metals from soil → Acid leaching → Soil is removed and made acidic. The acidic natural means the heavy metals will dissolve out of soil and be washed away. It works but is expensive.</li> <li>b) Improve crop yields → Plants have a preferred soil pH in which they wish to grow optimally. For example, beans prefer a slightly basic soil whereas corn prefers slightly acidic. If the farmer can match the pH preferences of the crop, it will yield more.</li> <li>c) Growth of micro-organisms in pool - A pool that is slightly basic (between 7.2 and 7.8) will prevent the growth of micro-organisms. Below pH 7.0, the water will irritate humans so we try not to do that.</li> </ul>
7.5 Neutralization Reactions		
1		a) Neutral means a pH of 7.

		b) If an acid (pH < 7) is used to neutralize a strong base (pH 12), then I would expect the pH of the solution to decrease. The lower the pH, the weaker the base until (if) it reaches pH 7.
2		a) $\text{HCl} + \text{KOH} \rightarrow \text{KCl} + \text{H}_2\text{O}$ <b>already balanced</b> b) $\text{H}_2\text{SO}_4 + 2 \text{KOH} \rightarrow 2 \text{H}_2\text{O} + \text{K}_2\text{SO}_4$ <b>balanced now.</b>
6		CaO when mixed/exposed to water creates a base, calcium hydroxide. Cement is made pourable by adding water to the bricklayer should take protective measures (gloves) to keep this base from affecting his/her skin. Bases and acids are corrosive.
9		If the fishy smell of fish is a base, then if this base is neutralized, the smell disappears. Vinegar and lemon juice are tasty acids. If they are added to the fish, it will neutralize the base and knock out the smell!