Properties of Strong and Weak Acids and Bases Answer Key

1.

Acid	Chemical formula	pH (slightly less than 7 or much less than 7)	Conductivity (high or low)	Reactivity with magnesium metal (high or low)
hydrochloric acid	*HCl(aq)*	*<< 7*	*high*	*high*
ethanoic acid	*$CH_3COOH(aq)$*	*< 7*	*low*	*low*
boric acid	*$H_3BO_3(aq)$*	*< 7*	*low*	*low*
hydrofluoric acid	*HF(aq)*	*< 7*	*low*	*low*
sulfuric acid	*$H_2SO_4(aq)$*	*<< 7*	*high*	*high*
perchloric acid	$HClO_4(aq)$	*<< 7*	*high*	*high*
phosphoric acid	$H_3PO_4(aq)$	*< 7*	*low*	*low*
hydrobromic acid	HBr(aq)	*<< 7*	*high*	*high*
sulfurous acid	$H_2SO_3(aq)$	*< 7*	*low*	*low*

(Answers appear in italics.)

2. Solution A will have a lower pH. Since it is a stronger electrolyte, it has ionized to a greater degree than B. Therefore, it is a stronger acid and has a lower pH at the same concentration.

3. Their pH cannot be used to tell them apart. The one with the pH closer to seven could be less basic because it is more dilute, or because it is a weaker base. Based on the information given, it is not possible to distinguish which is the greater contributing factor.

Copyright © 2007, McGraw-Hill Ryerson Limited, a Subsidiary of the McGraw-Hill Companies. All rights reserved.
This page may be reproduced for classroom use by the purchaser of this book without the written permission of the publisher.