Year 12 Chemistry
Mastery Test: Distinguish between

1. For each of the following pairs of substances, describe a chemical test (not the use of indicators!) that will distinguish between them. State the distinguishing observations; if there is no visible reaction write "nvr". If there is a chemical reaction, write the appropriate equation.

	What would you do	What would you observe	Chemical equation where appropriate
Solid Ba and Solid Mg		With Ba	
		With Mg	
Solid MgO and Solid $MgCO_3$		With MgO	
		With $MgCO_3$	

(6 marks)

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Mastery Test: Distinguish between - SOLUTIONS

2. For each of the following pairs of substances, describe a chemical test (not the use of indicators!) that will distinguish between them. State the distinguishing observations; if there is no visible reaction write "nvr". If there is a chemical reaction, write the appropriate equation.

	What would you do	What would you observe	Chemical equation where appropriate
Solid Ba and	Add HCl to both and then add Na_2SO_4 solution	With Ba A colourless odourless gas would be formed Then a white ppt	$Ba + 2H^+ \rightarrow H_2 + Ba^{2+}$ $Ba^{2+} + SO_4^{2-} \rightarrow BaSO_4(s)$
Solid Mg		With Mg A colourless odourless gas formed then no further change	$Mg + 2H^+ \rightarrow H_2 + Mg^{2+}$-
Solid MgO and	Add a solution of dilute hydrochloric acid	With MgO The white solid would dissolve	$MgO_{(s)} + 2H^+_{(aq)} \rightarrow H_2O_{(l)} + Mg^{2+}_{(aq)}$
Solid $MgCO_3$		With $MgCO_3$ A colourless odourless gas would be formed	$MgCO_{3(s)} + 2H^+_{(aq)} \rightarrow CO_{2(g)} + H_2O_{(l)} + Mg^{2+}_{(aq)}$

(6 marks)