

主 題 7 雙根號化簡(課外補充)

【觀念一】

$$(1)(\sqrt{a} + \sqrt{b})^2 = (\sqrt{a})^2 + 2\sqrt{a}\sqrt{b} + (\sqrt{b})^2 = a + b + 2\sqrt{ab}$$

$$(2)\sqrt{a} + \sqrt{b} = \sqrt{a + b + 2\sqrt{ab}}$$

【觀念二】

$$(1)(\sqrt{a} - \sqrt{b})^2 = (\sqrt{a})^2 - 2\sqrt{a}\sqrt{b} + (\sqrt{b})^2 = a + b - 2\sqrt{ab}$$

$$(2)\text{當 } a \geq b, \sqrt{a} - \sqrt{b} = \sqrt{a + b - 2\sqrt{ab}}$$

例 1. 完成下列化簡結果

$$(1)\sqrt{3+2\sqrt{2}} =$$

$$(2)\sqrt{3-2\sqrt{2}} =$$

$$(3)\sqrt{7+2\sqrt{12}} =$$

$$(4)\sqrt{7-2\sqrt{10}} =$$

$$(5)\sqrt{9-2\sqrt{20}} =$$

$$(6)\sqrt{12+6\sqrt{3}} =$$

$$(7)\sqrt{2+\sqrt{3}} =$$

$$(8)\sqrt{3-\sqrt{5}} =$$