Ex. 1

(a) $\sqrt{2}(6+\sqrt{10})$

$\sqrt{2}\cdot 6 = 6\sqrt{2}$

$\sqrt{2}\cdot\sqrt{10} = \sqrt{20} = 2\sqrt{5}$

$= 6\sqrt{2} + 2\sqrt{5}$

(b) $(\sqrt{2}-\sqrt{5})(\sqrt{6}+2)$

$\sqrt{2}\cdot\sqrt{6} = \sqrt{12} = 2\sqrt{3}$

$\sqrt{2}\cdot 2 = 2\sqrt{2}$

$-\sqrt{5}\cdot\sqrt{6} = -\sqrt{30}$

$-\sqrt{5}\cdot 2 = -2\sqrt{5}$

$= 2\sqrt{3} + 2\sqrt{2} - \sqrt{30} - 2\sqrt{5}$

(c) $(\sqrt{5y}+2)(\sqrt{5y}-2)$ Special Products

$\sqrt{5y}\cdot\sqrt{5y} = \sqrt{25y^2} = 5y$

$\sqrt{5y}\cdot -2 = -2\sqrt{5y}$

$2\cdot\sqrt{5y} = 2\sqrt{5y}$

$2\cdot -2 = -4$

$5y - 2\sqrt{5y} + 2\sqrt{5y} - 4$

$= 5y - 4$