

Simplifying Radicals

$\frac{\sqrt{18}}{\sqrt{9}}$ $= \sqrt{\frac{18}{9}}$ $= \sqrt{2}$ $=$	$4(3 + \sqrt{12}) - 2$ $= (4 + \sqrt{12}) -$ $= (4 + \sqrt{4 \times 3}) -$ $= (4 + 2\sqrt{3}) -$ $= 4 + 2\sqrt{3} -$ $= 2\sqrt{3} +$	$\frac{6\sqrt{2}}{\sqrt{3}}$ $= \frac{\sqrt{2}}{\sqrt{3}} \times \frac{\sqrt{2}}{\sqrt{2}}$ $= \frac{\sqrt{2} \times \sqrt{2}}{\sqrt{3} \times \sqrt{2}}$ $= \frac{\sqrt{2}}{\sqrt{6}}$ $= \frac{\sqrt{2}}{\sqrt{2 \times 3}}$ $= \frac{\sqrt{2}}{\sqrt{2} \sqrt{3}}$ $= \frac{1}{\sqrt{3}}$
$2\sqrt{8} \times 5\sqrt{6}$ $= 2 \times \sqrt{8} \times 5 \times \sqrt{6}$ $= 10 \times \sqrt{8 \times 6}$ $= 10 \times \sqrt{48}$ $= 10 \times \sqrt{16 \times 3}$ $= 10 \times 4\sqrt{3}$ $= 40\sqrt{3}$	$4(3 + \sqrt{2}) - \sqrt{2}(3 - \sqrt{2})$ $= 4 \times 3 + 4\sqrt{2} - \sqrt{2} \times 3 + \sqrt{2} \times \sqrt{2}$ $= 12 + 4\sqrt{2} - 3\sqrt{2} + 2$ $= 14 + \sqrt{2}$	$(2 - \sqrt{5})(4 + \sqrt{5})$ $= 2 \times 4 + 2\sqrt{5} - \sqrt{5} \times 4 - \sqrt{5} \times \sqrt{5}$ $= 8 + 2\sqrt{5} - 4\sqrt{5} - 5$ $= 3 - 2\sqrt{5}$