6. $3(2+\sqrt{2})$

Distribute the 3 to all terms inside the brackets	$=(3)(2)+3(\sqrt{2})$
Simplify	$=(3)(2)+3(\sqrt{2})$ $=6+3\sqrt{2}$

7. $\sqrt{2}(3+5\sqrt{7})$

Distribute $\sqrt{2}$ the to all terms inside the brackets	$=\sqrt{2}(3)+\sqrt{2}(5\sqrt{7})$
Multiply the coefficients and the radicands Simplify	$=3\sqrt{2}+5\sqrt{2\cdot 7}$ $=3\sqrt{2}+5\sqrt{14}$

8. $4\sqrt{3}(2\sqrt{6}-5\sqrt{3})$

Distribute the 3 to all terms inside the brackets	$=4\sqrt{3}(2\sqrt{6})-4\sqrt{3}(5\sqrt{3})$
Multiply coefficients and multiply radicands Simplify	$=8\sqrt{18}-20\sqrt{9}$ $=8\sqrt{9\cdot 2}-20(3)$ $=8(3)\sqrt{2}-60$ $=24\sqrt{2}-60$

9. $(2+\sqrt{3})(4-3\sqrt{5})$

Multiply each term in the first bracket to each term in the second bracket.	$(2+\sqrt{3})(4-3\sqrt{5})$
	$=2(4)+2(-3\sqrt{5})+\sqrt{3}(4)+\sqrt{3}(-3\sqrt{5})$ $=8-6\sqrt{5}+4\sqrt{3}-3$

10. $(4\sqrt{5}+2\sqrt{3})(3\sqrt{5}-\sqrt{3})$

Multiply each term in the first bracket to each term in the second bracket	$(4\sqrt{5}+2\sqrt{3})(3\sqrt{5}-\sqrt{3})$ $=4\sqrt{5}(3\sqrt{5})+4\sqrt{5}(-\sqrt{3})+2\sqrt{3}(3\sqrt{5})+2\sqrt{3}(-\sqrt{3})$
Multiply coefficients and multiply radicands	$=12\sqrt{25}-4\sqrt{15}+6\sqrt{15}-2\sqrt{9}$
Simplify	$=12(5)-4\sqrt{15}+6\sqrt{15}-2(3)$ $=60-4\sqrt{15}+6\sqrt{15}-6$ $=54+2\sqrt{15}$