Surds – The Basics Mark Scheme		
1(a)	$(\sqrt{5})2 = 2\sqrt{5}$	[1]
1(b)	$\sqrt{7} \times \sqrt{7} = 7$	[1]
1(c)	$(\sqrt{11})^2 = 11$	[1]
1(d)	$\sqrt{8} \times \sqrt{2} = 4$	[1]
1(e)	$\sqrt{18} \times \sqrt{2} = 6$	[1]
2(a)	$\sqrt{20} = \sqrt{4} \times \sqrt{5} = 2\sqrt{5}$	[1]
2(b)	$\sqrt{45} = \sqrt{9 \times 5} = \sqrt{9} \times \sqrt{5} = 3\sqrt{5}$	[1]
2(c)	$\sqrt{32} = \sqrt{16 \times 2} = \sqrt{16} \times \sqrt{2} = 4\sqrt{2}$	[1]
2(d)	$\sqrt{24} = \sqrt{4}\sqrt{6} = 2\sqrt{6}$	[1]
2(e)	$\sqrt{112} = \sqrt{16}\sqrt{7} = 4\sqrt{7}$	[1]
3(a)	$3\sqrt{2} \times 3\sqrt{2} = 9\sqrt{4} = 18$	[1]
3(b)	$\frac{\sqrt{50}}{5} = \frac{\sqrt{25} \times \sqrt{2}}{5} = \sqrt{2}$	[1]
3(c)	$2\left(2\sqrt{2} \times 3\sqrt{2}\right) = 2(6 \times 2) = 2 \times 12 = 24$	[1]
3(d)	$2\sqrt{2} \times 4\sqrt{5} = 8\sqrt{10}$	[1]
3(e)	$4\sqrt{24} - 5\sqrt{6} = 4\sqrt{4} \times \sqrt{6} - 5\sqrt{6}$ $= 8 \times \sqrt{6} - 5\sqrt{6} = 3\sqrt{6}$	[1]
4	$= \sqrt{48} - \sqrt{12}$ $= \sqrt{16 \times 3} - \sqrt{4 \times 3}$	[1]
	$= 4\sqrt{3} - 2\sqrt{3}$	[1] Correct surds
	$= 2\sqrt{3}$	[1] Grouping like terms
5(a)	$(2 - \sqrt{3})(1 + \sqrt{3})$ $= 2 - \sqrt{3} + 2\sqrt{3} - 3$	[1] Expanding
	$= -1 + \sqrt{3}$	[1] Simplifying
5(b)	$(1 - \sqrt{5})(2 + \sqrt{3})$ $= 2 - 2\sqrt{5} + \sqrt{3} - \sqrt{15}$	[1] Expanding correctly, not trying to manipulate further
5(c)	$\left(2 + 3\sqrt{3}\right)\left(6 + 5\sqrt{3}\right) = 12 + 10\sqrt{3} + 18\sqrt{3} + 45$	[1] Expanding
	$57 + 10\sqrt{3} + 18\sqrt{3} = 57 + 28\sqrt{3}$	[1] Grouping common terms

END