Question	Answer	Marks	AO	Guidance
3	**DR** $\frac{\sqrt{6}-\sqrt{5}}{6-5}+\frac{\sqrt{7}-\sqrt{6}}{7-6}$ oe	**M1**	**3.1a**	Rationalising denominators. This is the minimum working needed for **M1** Accept 1 for "6 – 5" and – 1 for "5 – 6" etc
	$\sqrt{7}-\sqrt{5}$ or $\frac{\sqrt{5}-\sqrt{7}}{-1}$	**A1**	**1.1**	
	$\frac{k}{\sqrt{5}+\sqrt{7}}=\frac{k\left(\sqrt{7}-\sqrt{5}\right)}{7-5}=\sqrt{7}-\sqrt{5}$		**2.2a**	
	so $k=2$	**A1**		Finding k convincingly after **M1**
	Alternative $\left(\sqrt{6}+\sqrt{7}\right)\left(\sqrt{5}+\sqrt{7}\right)+\left(\sqrt{5}+\sqrt{6}\right)\left(\sqrt{5}+\sqrt{7}\right)$ $=k\left(\sqrt{5}+\sqrt{6}\right)\left(\sqrt{6}+\sqrt{7}\right)$	**M1**		For dealing appropriately with fractions (working with both sides) e.g. clearing the fractions or making k the subject with the RHS as a single fraction. $k=\frac{\left(\sqrt{5}+\sqrt{7}+2\sqrt{6}\right)\left(\sqrt{5}+\sqrt{7}\right)}{\left(\sqrt{5}+\sqrt{6}\right)\left(\sqrt{6}+\sqrt{7}\right)}$
	$\left(2\sqrt{5}\sqrt{6}+2\sqrt{5}\sqrt{7}+2\sqrt{6}\sqrt{7}+12\right)$ $=k\left(\sqrt{5}\sqrt{6}+\sqrt{5}\sqrt{7}+\sqrt{6}\sqrt{7}+6\right)$	**A1**		Expanding brackets and collecting like surds $k=\frac{12+2\sqrt{5}\sqrt{7}+2\sqrt{5}\sqrt{6}+2\sqrt{6}\sqrt{7}}{6+\sqrt{5}\sqrt{7}+\sqrt{5}\sqrt{6}+\sqrt{6}\sqrt{7}}$
	$2\left(\sqrt{5}\sqrt{6}+\sqrt{5}\sqrt{7}+\sqrt{6}\sqrt{7}+6\right)$ $=k\left(\sqrt{5}\sqrt{6}+\sqrt{5}\sqrt{7}+\sqrt{6}\sqrt{7}+6\right)$ so $k=2$	**A1**		Finding k convincingly after **M1**
		[3]		