	Question		Answer	Marks	AO	Guidance	
8	**(a)**		**DR** $BE = \sqrt{3}$ from the standard triangle BDE $BC = AB\cos 45$ $BC = \dfrac{1+\sqrt{3}}{\sqrt{2}} = \dfrac{\sqrt{2}+\sqrt{6}}{2}$	**B1** **M1** **E1** **[3]**	**2.2a** **2.1** **2.2a**	Or $AB = 1+\sqrt{3}$ seen oe or Pythagoras' theorem AG	**B0** for decimal Must be seen $\dfrac{1+\sqrt{3}}{\sqrt{2}}$ must be seen
8	**(b)**		**DR** Triangle ABC is isosceles so $BC = AC$ but $AC = CD + \sqrt{2}$ so $CD = \dfrac{\sqrt{2}+\sqrt{6}}{2} - \sqrt{2}$ $= \dfrac{\sqrt{6}-\sqrt{2}}{2}$ $\sin 15 = \dfrac{CD}{BD} = \dfrac{\sqrt{6}-\sqrt{2}}{2} \div 2 = \dfrac{\sqrt{6}-\sqrt{2}}{4}$	**B1** **M1** **A1** **[3]**	**2.4** **2.1** **2.2a**	State or imply that $BC = AC$ and state $AC = CD + \sqrt{2}$ Obtain expression for CD, may be unsimplified Obtain expression for $\sin 15$ and simplify to answer given	**M0** if decimals seen **SC1** for showing using addition formula