Question	Answer	Marks	Partial Marks
2	$\frac{a+b\sqrt{5}}{1+7\sqrt{5}} = \frac{20}{4+2\sqrt{5}}$ or $\frac{20(1+7\sqrt{5})}{4+2\sqrt{5}}$ oe, soi	**B1**	
	$[20\times]\frac{1+7\sqrt{5}}{4+2\sqrt{5}}\times\frac{4-2\sqrt{5}}{4-2\sqrt{5}}$ or $[10\times]\frac{1+7\sqrt{5}}{2+\sqrt{5}}\times\frac{2-\sqrt{5}}{2-\sqrt{5}}$ oe	**M1**	condone one slip providing it is not in the rationalisation factor
	$\frac{20(28\sqrt{5}-70+4-2\sqrt{5})}{16-20}$ or $\frac{10(14\sqrt{5}-35+2-\sqrt{5})}{4-5}$ oe	**A1**	
	$a = 330$ and $b = -130$ oe, nfww	**A1**	
	Alternative method		
	$\frac{a+b\sqrt{5}}{1+7\sqrt{5}} = \frac{20}{4+2\sqrt{5}}$ oe, soi	**(B1)**	
	Cross multiplies and multiplies out: $20+140\sqrt{5} = 4a+4b\sqrt{5}+2a\sqrt{5}+10b$	**(M1)**	condone one sign or arithmetic error
	Correct pair of simultaneous equations $4a + 10b = 20$ oe $2a + 4b = 140$ oe and solves for $a = 330$ or $b = -130$	**(A1)**	
	$a = 330$ and $b = -130$ oe, nfww	**(A1)**	
3(a)	$\frac{3}{4}\mathbf{a} + \frac{1}{4}\mathbf{b}$ or equivalent simplified expression	**B2**	**B1** for $\mathbf{a} + \frac{1}{4}(\mathbf{b} - \mathbf{a})$ or $\mathbf{b} + \frac{3}{4}(\mathbf{a} - \mathbf{b})$ oe or for $3(\overrightarrow{OP} - \mathbf{a}) = \mathbf{b} - \overrightarrow{OP}$ oe

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