25	$(S_{10}=)\frac{10}{2}(2a+9d)$ **or** $(S_5=)\frac{5}{2}(2a+4d)$ oe **or** $a+7d=45$		5	M1	for a correct expression for the sum of the first 10 terms (S_{10}) or the first 5 terms (S_5) **or** a correct equation for the 8^{th} term Take 9 as their 10 – 1 and 4 as their 5 – 1 and 7 as their 8 – 1
	$\frac{10}{2}(2a+9d)=4\times\frac{5}{2}(2a+4d)$ oe			M1	for a correct equation relating S_{10} and S_5
	eg $d = 2a$ oe **or** $a=\frac{d}{2}$ oe **or** $a + 7d = 45$ oe **and** eg $10a – 5d = 0$ oe **or** eg $\frac{10}{2}(2(45-7d)+9d)=4\times\frac{5}{2}(2(45-7d)+4d)$ oe **or** $5d = 10(45 – 7d)$ oe			M1	(dep on M1) for d in terms of a, or vice-versa (must be correct) **or** for $a + 7d = 45$ oe **and** correctly reducing the equation relating S_{10} and S_5 to an equation with one term in a and one term in d eg $10a – 5d = 0$ oe **or** substituting a correct expression into their correct equation to obtain an equation in just d
	eg $a+7(2a)=45$ **or** $d = 6$ **or** eg $70a-35d=0$ $5a+35d=225$ + $(75a=225)$ or $10a-5d=0$ $10a+70d=450$ – $(-75d=-450)$			M1	(dep on M2) for a correct equation in just a **or** for $d = 6$ **or** for a correct method to eliminate a or d: coefficients of a or d the same **and** correct operation to eliminate selected variable (condone 1 arithmetical error)
		3		A1	Dep on M3
					Total 5 marks

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