Question	Answer	Marks	Guidance
11(c)	$m\mathbf{b} - \frac{3}{4}\mathbf{a} = \lambda\left(\frac{5\mathbf{b}}{2} - \frac{9\mathbf{a}}{4}\right)$	**B1**	
	$\lambda = \frac{1}{3}, \quad m = \frac{5}{6}$	**3**	**M1** for equating like vectors at least once **A1** for $\lambda = \frac{1}{3}$ **A1** for $m = \frac{5}{6}$
12(a)	$\frac{\text{cosec}\theta + 1 + \text{cosec}\theta - 1}{\text{cosec}^2\theta - 1}$	**B1**	Allow denominator unsimplified
	$\frac{2\text{cosec}\theta}{\cot^2\theta}$	**B1**	
	$\frac{2}{\sin\theta} \times \frac{\sin^2\theta}{\cos^2\theta}$ $2\sin\theta\sec^2\theta$	**B1**	Sufficient detail must be seen
12(b)	$2\sin 2\phi\sec^2 2\phi = 4\sin 2\phi$ Leading to $\sin 2\phi = 0$ $\phi = \pm 90^\circ,\ 0^\circ$	**2**	**M1** for attempt to solve $\sin 2\phi = 0$ obtaining at least one correct solution **A1** for all solutions
	$2\sin 2\phi\sec^2 2\phi = 4\sin 2\phi$ $\cos 2\phi = (\pm)\frac{1}{\sqrt{2}}$	**M1**	For dealing with $\sec^2 2\phi$ to obtain $\cos 2\phi = k$, where $0 \leq k \leq 1$
	$\phi = \pm 67.5^\circ,\ \pm 22.5^\circ$	**3**	**M1** for solution to obtain at least one correct solution **A1** for a correct pair of solutions **A1** for a second correct pair of solutions with no extra solutions within the range

Question	Answer	Marks	Guidance
13	$f'(x) = 4(3x+4)^{\frac{1}{2}} \quad (+c)$	**2**	**M1** for $a(3x+4)^{\frac{1}{2}}$ **A1** for $4(3x+4)^{\frac{1}{2}}$
	$18 = 4(4) + c$	**M1**	**Dep M** mark for attempting correctly to find the value of the arbitrary constant
	$c = 2$	**A1**	
	$f(x) = \frac{8}{9}(3x+4)^{\frac{3}{2}} \quad (+2x+d)$	**M1**	For $b(3x+4)^{\frac{3}{2}}$
	$f(x) = \frac{8}{9}(3x+4)^{\frac{3}{2}} + 2x \quad (+d)$	**A1**	Allow unsimplified
	$\frac{64}{9} = \frac{64}{9} \ (+8) \ + d$	**M1**	**Dep M** mark for attempt to find a second arbitrary constant
	$f(x) = \frac{8}{9}(3x+4)^{\frac{3}{2}} + 2x - 8$	**A1**	