

Question	Answer	Marks	AOs		Guidance
14	$\frac{1}{2} - \sin 2x \cos x = \sin x \cos 2x$ $\sin 3x = \frac{1}{2} \text{ oe}$ $x = \frac{\pi}{18} \text{ and } x = \frac{5\pi}{18}$ $\pm \int \left(\sin x \cos 2x - \left(\frac{1}{2} - \sin 2x \cos x \right) \right) dx \text{ oe}$ $F[x] = -\frac{x}{2} - \frac{\cos 3x}{3}$ $F\left[\frac{5\pi}{18}\right] - F\left[\frac{\pi}{18}\right]$ $\frac{\sqrt{3}}{3} - \frac{\pi}{9} \text{ or } \frac{3\sqrt{3}-\pi}{9} \text{ cao}$	M1 M1 A1 A1 M1 A1 M1 A1	3.1a 2.1 3.2a 1.1 1.1 1.1 1.1 1.1 3.2a	 from compound angle formula allow sign errors only A1 for each ignore limits allow the positive of this F[x] must be one of the correct forms	 <i>or</i> $4\sin^3 x - 3\sin x + \frac{1}{2} = 0$ oe 0.17453... A1 0.87266... A1 to 2 or more sf $\pm \left(-\frac{4}{3} \cos^3 x + \cos x - \frac{x}{2} \right)$ oe or $\pm \left(-\frac{1}{3} \cos 2x \cos x + \frac{1}{3} \sin x \sin 2x - \frac{1}{2} x \right)$ oe for A1 F[0.87266] – F[0.17453] for M1
		[8]			