4(a)	Any correct constant, so for $A=2$ or $B=3$ or $C=-1$ or $D=5$	B1
	$2x^4+15x^3+35x^2+21x-4=Ax^2(x+3)^2+Bx(x+3)^2+C(x+3)^2+D$ $\Rightarrow A=...,B=...,C=...,D=...$ or $2x^4+15x^3+35x^2+21x-4\div(x^2+6x+9)=...x^2+...x+...+\frac{...}{(x+3)^2}$	M1
	2 correct of $A=2,B=3,C=-1,D=5$	A1
	$A=2,B=3,C=-1,D=5$	A1
		(4)
(b)	$\int f(x)\,dx=\int\left(2x^2+3x-1+\frac{5}{(x+3)^2}\right)dx=\frac{2x^3}{3}+\frac{3x^2}{2}-x-\frac{5}{x+3}(+c)$	M1A1ftA1
		(3)
		Total 7

3 (i)	$\frac{d}{dx}\ln(\sin^2 3x)=\frac{1}{\sin\cancel{3x}}\times 2\cancel{\sin 3x}\times 3\cos 3x=6\cot 3x$	M1 A1 **(2)**
(ii) (a)	$\frac{d}{dx}(3x^2-4)^6=36x(3x^2-4)^5$	M1 A1 **(2)**
(b)	$\int x(3x^2-4)^5\,dx=\frac{1}{36}(3x^2-4)^6$	B1ft
	$\int_0^{\sqrt{2}} x(3x^2-4)^5\,dx=\left[\frac{1}{36}(3x^2-4)^6\right]_0^{\sqrt{2}}=\frac{1}{36}(2)^6-\frac{1}{36}(-4)^6=-112$	M1 A1cso **(3)** **(7 marks)**

Question Number	Scheme	Notes
8	$\int (2\cos x - \sin x)^2 \, dx = \int \left(4\cos^2 x - 4\sin x \cos x + \sin^2 x\right) dx$	M1
	$\int 4\sin x \cos x \, dx = \int 2\sin 2x \, dx = -\cos 2x$ or $\int 4\sin x \cos x \, dx = -2\cos^2 x \quad \text{or} \quad 2\sin^2 x$	M1
	$\int \left(4\cos^2 x + \sin^2 x\right) dx = \int \left(1 + 3\cos^2 x\right) dx = \int \left(1 + 3\left(\frac{\cos 2x + 1}{2}\right)\right) dx$ or $\int \left(4\cos^2 x + \sin^2 x\right) dx = \int \left(4\left(\frac{\cos 2x + 1}{2}\right) + \frac{1 - \cos 2x}{2}\right) dx$	M1
	$\int (2\cos x - \sin x)^2 \, dx = \frac{3}{4}\sin 2x + \cos 2x + \frac{5}{2}x \, (+c)$ or $\int (2\cos x - \sin x)^2 \, dx = \frac{3}{4}\sin 2x + 2\cos^2 x + \frac{5}{2}x \, (+c)$ or $\int (2\cos x - \sin x)^2 \, dx = \frac{3}{4}\sin 2x - 2\sin^2 x + \frac{5}{2}x \, (+c)$	A1A1
		(5)
		Total 5