INTEGRATION OF TRIGONOMETRIC FUNCTIONS

1 Find: **(a)** $\int \sin^2 x\,dx$ **(b)** $\int \cos^2 2x\,dx$ **(c)** $\int \sin^2 \frac{x}{2}\,dx$ **(d)** $\int \cos^2 3x\,dx$

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3 Find: **(a)** $\int \sin^2 x \cos x \, dx$ **(b)** $\int \tan x \sec^2 x \, dx$ **(c)** $\int \cos^3 x \sin x \, dx$

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3 Find: **(g)** $\int \sin x \cos^4 x \, dx$ **(h)** $\int \sec^2 x \sin x \, dx$ **(i)** $\int \operatorname{cosec}^2 x \cos x \, dx$

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3 Find: (g) $\int 2\cos^2\frac{x}{2}\,dx$ (h) $\int \sin^2\left(\frac{\pi}{2}-x\right)dx$ (i) $\int \sin x\cos 2x\,dx$

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5 Find: **(a)** $\int \sin^2 2x\,dx$ **(b)** $\int \cos^3 2x\,dx$ **(c)** $\int \sin^2 2x \cos^2 2x\,dx$

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5 Find: (g) $\int \cos^5 x\, dx$ $\int \cos^4 x \sin^3 x\, dx$

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7 Evaluate: **(d)** $\int_{-\pi}^{\pi} \sin^3 x \cos x \, dx$ **(e)** $\int_0^{\frac{\pi}{4}} \tan x \sec^2 x \, dx$ **(f)** $\int_{\pi}^{\frac{3\pi}{2}} \sin x \cos x \, dx$

7 Evaluate: **(g)** $\int_0^{\pi} 2\sin\theta\cos^2\theta\, d\theta$ **(h)** $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \cos^2\left(x-\frac{\pi}{4}\right)dx$