Integrals

(1) 
$$e^{in2c} cbc = \begin{cases} 0 & n \neq 0 \\ 2\pi & n = 0 \end{cases}$$

(2)  $e^{ix} sinx dx = i\pi \int_{0}^{2\pi} e^{ix} sinx dx = -i\pi$ 

(3)  $\int_{0}^{2\pi} e^{ix} (\cos x dx) = \int_{0}^{2\pi} e^{-ix} sinx dx = -i\pi$ 

(4)  $\int_{0}^{\pi} sin^{3}x dx = \int_{0}^{2\pi} e^{-ix} (\cos x dx) = \pi$ 

(5)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

(6)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

(7)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

(8)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

(9)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

(10)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

(11)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

(12)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

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(3)  $\int_{0}^{\pi} (\cos^{3}x) dx = 0$ 

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(19)  $\int_{0}^{\pi}$