6 部分積分法

$$(1) \int_0^\pi x^2 \cos x \, dx$$

(1) 
$$\int_0^\pi x^2 \cos x \, dx$$
 (2)  $\int_0^\pi x^2 \sin 2x \, dx$  (3)  $\int_0^1 x^3 e^{-x} \, dx$ 

(3) 
$$\int_{0}^{1} x^{3}e^{-x}dx$$

(4) 
$$\int_0^1 (x^2 - 2x + 3)e^x dx$$
 (5)  $\int_1^e x \log x dx$ 

7 工夫が必要な積分法

(1) 
$$\int_0^{2\pi} \sqrt{1 + \cos x} \, dx$$
 (2)  $\int_0^{\pi} \sin 3x \sin 2x \, dx$  (3)  $\int_0^{\pi} \sin 5x \cos 3x \, dx$ 

$$(2) \int_0^{\pi} \sin 3x \sin 2x \, dx$$

(3) 
$$\int_0^{\pi} \sin 5x \cos 3x \, dx$$

$$(4) \int_{0}^{\pi} e^{x} \sin x \, dx$$

(4) 
$$\int_0^{\pi} e^x \sin x \, dx$$
 (5)  $\int_1^2 \frac{1}{x(x+1)} \, dx$