

§ 6.4 微分積分の基本定理

問題 6.4.1

$$\int_{\frac{\pi}{2}}^{\pi} \sin x dx = -\cos \pi - \left(-\cos \frac{\pi}{2}\right) = 1 .$$

問題 6.4.2

$$\int_1^e \frac{1}{x} dx = \ln e - \ln 1 = 1 .$$

問題 6.4.3

$$\int_1^{\sqrt{3}} \frac{1}{1+x^2} dx = \tan^{-1} \sqrt{3} - \tan^{-1} 1 = \frac{\pi}{3} - \frac{\pi}{4} = \frac{\pi}{12} .$$