

## 2008 年度後期「微分積分」(担当: 戸瀬 信之)

次の積分の値を求めよ。

$$(1) \int_1^8 \sqrt[3]{x} dx \quad (2) \int_1^2 \frac{1}{y^3} dy \quad (3) \int_0^1 x\sqrt{x} dx \quad (4) \int_0^{\frac{\pi}{2}} t \cos t dt \quad (5) \int_1^e t \log t dt$$

$$(6) \int_{-1}^1 \frac{dx}{\sqrt{x+2}} \quad (7) \int_1^e (\log x)^2 dx \quad (8) \int_0^1 t e^{-t^2} dt \quad (9) \int_0^{\frac{1}{2}} t \sqrt{1-t^2} dt \quad (10) \int_0^1 x(x-1)^3 dx$$

$$(11) \int_0^6 \left(\frac{1}{3}x - 1\right)^4 dx \quad (12) \int_0^{\frac{\pi}{4}} \frac{\sin x}{1+\cos x} dx \quad (13) \int_0^{\frac{\pi}{2}} \sin^3 x \cos x dx \quad (14) \int_1^2 \log(x+1) dx \quad (15) \int_1^e (2x-1) \log x dx$$

$$(16) \int_{-3}^{-1} \frac{1}{(2x+1)^3} dx \quad (17) \int_0^1 \frac{x-1}{(x-2)^2} dx \quad (18) \int_2^3 \frac{1}{x^2-1} dx \quad (19) \int_1^2 x \log(x+1) dx \quad (20) \int_0^{\frac{\pi}{2}} \cos 2x dx$$