

INTEGRALS 1

CALCULUS (I)

Evaluate the following integrals.

$$(1) \int_0^4 x^3(x^2 + 1)^{-\frac{1}{2}} dx.$$

$$(2) \int_e^{e^2} \frac{1}{t \log t} dt.$$

$$(3) \int x^5 e^{-x^2} dx.$$

$$(4) \int \tan^2 x \sec x dx.$$

$$(5) \int x e^{\sqrt{x}} dx.$$

$$(6) \int_0^1 \sqrt{x} \sin(\pi\sqrt{x}) dx.$$

$$(7) \int \frac{1}{x^2 + x + 1} dx.$$

$$(8) \int \sqrt{9 + x^2} dx.$$

$$(9) \int x^2 \arctan x dx.$$