

**International Master's Programs of Chemical Engineering in the Graduate School of Engineering,
Kyushu University (Academic Year from October, 2026)**

Subject : Math

(1.1) $y = C_1 e^{2x} + C_2 e^{-x}$ where C_1 and C_2 are arbitrary constants

(1.2) $y = C_1 e^{2x} + C_2 e^{-x} + \frac{x}{3} e^{2x}$ where C_1 and C_2 are arbitrary constants

(1.3) $y = C_1 \cos 2x + C_2 \sin 2x - \frac{x}{4} \cos 2x$ where C_1 and C_2 are arbitrary constants

(1.4) $y = C_1 e^{-x} + (C_2 + C_3 x) e^{2x}$ where C_1 , C_2 , and C_3 are arbitrary constants.

(1.5) $y = C_1 e^{-x} + (C_2 + C_3 x) e^{2x} + \frac{x}{4} + \frac{1}{4} e^{3x}$ where C_1 , C_2 , and C_3 are arbitrary constants.

(2.1) $\int_2^3 \int_0^{\pi/2} \int_0^{\pi/2} r^5 \sin^3 \theta \cos \theta \cos \phi \sin \phi \, dr \, d\theta \, d\phi$

(2.2) $\frac{665}{48}$