

Example Answers

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

科目 / Subject : 流動 / Fluid Dynamics (1 枚 / 1 sheet)

1.

(1.1)

$$\mu \frac{d^2 u_z}{dx^2} + \rho g \cos \theta = 0$$

(1.2)

$$u_z(x) = \frac{\delta^2 \rho g \cos \theta}{2\mu} \left\{ 1 - \left(\frac{x}{\delta} \right)^2 \right\}$$

(1.3)

$$\delta \rho g \cos \theta$$

(1.4)

$$\frac{\delta^3 \rho g \cos \theta}{3\mu}$$

2.

(2.1)

$$7.64 \times 10^4$$

(2.2)

$$4.75 \times 10^{-3}$$

(2.3)

$$4.45 \times 10^4 \text{ Pa}$$

(2.4)

$$5.56 \text{ Pa}$$

(2.5)

$$1.87 \text{ m/s}$$

(2.6)

$$1.81 \text{ m/s}$$