

$$1 (1) A = 80 \text{ mm} \times 80 \text{ mm} = 80 \times 10^{-3} \text{ m} \times 80 \times 10^{-3} \text{ m} = 6400 \times 10^{-6} \text{ m}^2$$

$$V = A \times h = 6400 \times 10^{-6} \text{ m}^2 \times \underbrace{100 \times 10^{-3} \text{ m}}_{100 \text{ mm}} = 640000 \times 10^{-9} \text{ m}^3$$

$$= 0.64 \times 10^{-3} \text{ m}^3$$

$$= 0.64 \times 10^6 \text{ mm}^3$$

mm³の形の解でも良いが無理に変換せず、m³の形で問題ありません。

$$(2) d = 15 \text{ mm} = 15 \times 10^{-3} \text{ m}$$

$$A = \pi d^2 / 4 = \pi \times (15 \times 10^{-3} \text{ m})^2 / 4 = 1.77 \times 10^{-4} \text{ m}^2$$

$$V = A \times h = 1.77 \times 10^{-4} \text{ m}^2 \times 2 \text{ m} = 3.53 \times 10^{-4} \text{ m}^3$$

$$2 (1) V = 2 \text{ m}^3, m = 2000 \text{ kg}$$

$$\rho = \frac{m}{V} = \frac{2000 \text{ kg}}{2 \text{ m}^3} = 1000 \text{ kg/m}^3$$

$$(2) \rho = 800 \text{ kg/m}^3, V = 2 \text{ m}^3$$

$$\rho = \frac{m}{V} \rightarrow m = \rho V = 800 \text{ kg/m}^3 \times 2 \text{ m}^3 = 1600 \text{ kg}$$

$$(3) 9.00 \text{ g/cm}^3 = 9.00 \times \frac{1 \text{ g}}{1 \text{ cm}^3} = 9.00 \times \frac{10^{-3} \text{ kg}}{\underbrace{(10^{-2} \text{ m})^3}_{10^{-6} \text{ m}^3}} = 9.00 \times 10^3 \text{ kg/m}^3$$

$$(4) \rho = 2.7 \text{ g/cm}^3 = 2.7 \times \frac{1 \text{ g}}{1 \text{ cm}^3} = 2.7 \times \frac{10^{-3} \text{ kg}}{(10^{-2})^3 \text{ m}^3} = 2700 \text{ kg/m}^3$$

$$m = \rho V = 2700 \text{ kg/m}^3 \times 0.8 \text{ m}^3 = 2160 \text{ kg} = 2.16 \text{ t}$$

$$3 \quad S = P / 1000 \text{ であるため}$$

$$(1) 0.8$$

$$(2) 15$$

※ (1)(2) とともに単位は無い無次元数である。