

①

$$h \times SG_{\text{oil}} = 70 - (4 - h)$$

$$h = \frac{H - 70}{1 - SG_{\text{oil}}} = 20$$

②

$$\vec{u} = ax\vec{i} + by\vec{j}$$

$$\vec{a} = \frac{d\vec{u}}{dt} = \left(u\frac{\partial u}{\partial x} + v\frac{\partial u}{\partial y}\right)\vec{i} + \left(u\frac{\partial v}{\partial x} + v\frac{\partial v}{\partial y}\right)\vec{j}$$

$$= a^2x\vec{i} + b^2y\vec{j}$$

$$\text{at pt. } (1, 1) \quad \vec{a} = a^2\vec{i} + b^2\vec{j}$$

3. d

4. ~~a~~

5.

$$28 \times 4 \times 5 \left(1 + 2 \times \frac{4}{3}\right) = 5 \times F_B$$

$$F_B = \frac{88}{3} \gamma = 293.33 \text{ kN}$$