

1.

$$m = \rho V = \rho l^2 d.$$

$$V' = Sl,$$

$$\rho' = \frac{m}{V'} = \frac{\rho l^2 d}{Sl} = \frac{\rho d}{S} = 4 \text{ / }^3.$$

2.

$$S,$$

$$V_1 t + V_2 t = S, \tag{1}$$

$$3V_2 t = S. \tag{2}$$

$$V_2 t = \frac{S}{3}, \quad V_1 t = 2V_2 t = \frac{2S}{3}.$$

$$\frac{S}{3},$$

3.

$$mg \left(\rho_1 g V / 2 \right) \quad Mg \left(\rho_1 g M / \rho_2 \right).$$

$$(m + M)g = \frac{\rho_1 g V}{2} + \frac{\rho_1 g M}{\rho_2}.$$

$$M = \frac{\frac{\rho_1 V}{2} - m}{1 - \frac{\rho_1}{\rho_2}} \approx 0,55.$$

4.

$$mgl_1 = m_2 gl_2.$$

$$m_1 gl_1 = mgl_2,$$

$$m = \sqrt{m_1 m_2} = 0,6.$$

5.

1.

2.

3.

$$F = \frac{mg}{2}.$$

4.

$$m = \frac{2F}{g}.$$