for no viscocity { using dimensional analysis)

$$q = \frac{L^3}{T}$$
$$h = L$$
$$A_0 = L^2$$
$$g = L/T^2$$

4 {unknown} − 2 {dimen} = 2

2 groups are formed

it can be formed in many ways

{ possible ways { shown in class }

$$\left(\frac{A_0}{h^2}\right), \left(\frac{q^2}{gA_0^2 h}\right)$$

$$f\left(\frac{A_0}{h^2}\right) = \left(\frac{q^2}{gA_0^2 h}\right)$$ → can be expressed as a function

as $\frac{A_0}{h^2}$ → or A_0 → 0 small hole

$$f(0) \longrightarrow const^n$$

$$\frac{q^2}{gA_0^2 h} = c$$

$$q = \sqrt{cgA_0^2} \, (h)^{1/2}$$

$$q \propto (h)^{1/2}$$