$Q = v_1 S_1 = v_2 S_2 = \sqrt{\frac{S_1^2 S_2^2}{S_2^2 - S_1^2} 2gh}$

$Q = v_1 S_1 = v_2 S_2 = \sqrt{\frac{S_1^2 S_2^2}{S_2^2 - S_1^2} 2g\Delta h}$

2. Дано: v_0, r_0, h

Найдем r:

$\frac{\rho v_1^2}{2} - \frac{\rho v_0^2}{2} = \rho g h$

$v_1^2 = 2gh + \frac{v_0^2}{2} \Rightarrow v_1 = \sqrt{2gh + \frac{v_0^2}{2}}$

$S_0 v_0 = S_1 v_1$

$S_1 = \frac{v_0}{v_1} S_0$

$\Rightarrow r_1 = r_0 \sqrt{\frac{v_0}{v_1}}$

$r_1 = \sqrt{\frac{v_0}{\sqrt{2gh + \frac{v_0^2}{2}}}} r_0$

Ответ: $r = \sqrt{\quad}$

$r = r_0 \sqrt{\frac{v_0}{\sqrt{2gh + \frac{v_0^2}{2}}}}$