$$\begin{cases} F = -\dfrac{c}{3Rk(z)}\dfrac{du}{dz} \\ \dfrac{1}{Rz}\dfrac{d}{dz}(zF) = ck(z)(u_p - u) \end{cases}$$

$$z = \frac{r}{R} \qquad dr = R\,dz$$

~~Вез~~

$$\frac{1}{Rz}\frac{d}{dz}(zF) - ck(z)u_p + ck(z)u = 0 \quad |\times z$$

$$\frac{1}{R}\frac{d}{dz}(zF) + \overbrace{ck(z)zu}^{p(z)} - \overbrace{ck(z)zu_p}^{f(z)} = 0$$

$$\cancel{F = -\frac{k''(z)}{R}\frac{du}{dz} \quad (1)} \qquad \cancel{-\frac{k''(z)}{R} = -\frac{c}{3Rk(z)}} \qquad \cancel{k''(z) = -\frac{c}{3k(z)}}$$

$$\boxed{\begin{gathered} \cancel{p(z) = ck(z)} \\ \cancel{f(z) = ck(z)u_p} \end{gathered}}$$

↑ верно.

$$-\frac{1}{R}\frac{d}{dz}(zF) - p(z)zu + f(z)z = 0$$

$$-\frac{1}{R}\int_{z_{n-\frac{1}{2}}}^{z_{n+\frac{1}{2}}}\frac{d}{dz}(zF)\,dz - \int p(z)zu\,dz + \int f(z)z\,dz = 0$$

$$\frac{1}{R}\left(z_{n-\frac{1}{2}}F_{n-\frac{1}{2}} - z_{n+\frac{1}{2}}F_{n+\frac{1}{2}}\right) - p_n u_n \underbrace{\frac{z_{n+\frac{1}{2}} - z_{n-\frac{1}{2}}}{2}}_{V_n} + f_n V_n = 0 \quad (1)$$

$$\cancel{u_3\ (1)\quad \int_{z_n}^{z_{n+1}}\frac{du}{dz}\,dz = -\int_{z_n}^{z_{n+1}}\frac{R}{k''(z)}F\,dz = -R F_{n+\frac{1}{2}}\int_{z_n}^{z_{n+1}}\frac{dz}{k''(z)} =}$$