$h = 4.5$ m
$P = 11.0 \times 10^4$ N
$F = 3.0 \times 10^5$ N
$E = 2.0 \times 10^{11}$ N / m^2
$A = 250$ cm^2

$$-\frac{\mathrm{d}}{\mathrm{d}x}\left(EA\frac{\mathrm{d}u}{\mathrm{d}x}\right) = 0$$

$$-\frac{\mathrm{d}}{\mathrm{d}x}\left(a_1(x)\frac{\mathrm{d}u}{\mathrm{d}x}\right) + a_0(x)u = f(x),$$