

$$v_x(y, z) = \frac{4h^2 \Delta p}{\pi^3 \eta L} \sum_{n, \text{odd}}^{\infty} \frac{1}{n^3} \left[ 1 - \frac{\cosh\left(n\pi \frac{y}{h}\right)}{\cosh\left(n\pi \frac{w}{2h}\right)} \right] \sin\left(n\pi \frac{z}{h}\right)$$