$$\frac{dX^2}{dz^2}\Big/X(z) = \frac{-Y_0 K_u K_{ny} \sinh(K_y Y)\cos(K_u z)\sin(K_{ny} z) + \frac{Y_0' K_u \sinh(K_y Y)(K_u^2 - K_{ny}^2)\cos(K_u z)\cos(K_{ny} z)}{K_u^2 - K_{ny}^2} - \frac{2K_u K_{ny} \sin(K_u z)\sin(K_{ny} z)}{K_u^2 - K_{ny}^2} + \frac{K_y}{K_u^2}\cosh(K_y Y)\sin(K_u z)}{-\frac{Y_0 K_u K_{ny} \sinh(K_y Y)\, 2K_u K_{ny} \sin(K_u z)\cos(K_{ny} z)}{(K_u^2 - K_{ny}^2)^2} + \frac{-Y_0 K_u K_{ny} \sinh(K_y Y)(K_u^2 - K_{ny}^2)(\cos K_u z)\sin(K_u z)}{(K_u^2 - K_{ny}^2)^2} + \frac{Y_0' K_u \sinh(K_y Y)\cos(K_u z)\cos(K_{ny} z)}{(K_u^2 - K_{ny}^2)} + \frac{K_y}{K_u^2} \ldots}$$

$$= \frac{-Y_0 K_u K_{ny} \sinh(K_y Y)\cos(K_u z)\sin(K_{ny} z)(K_u^2 - K_{ny}^2)^2 + Y_0' K_u \sinh(K_y Y)(K_u^2 - K_{ny}^2)^2 \cos(K_u z)\cos(K_{ny} z) - 2K_u K_{ny} \sin(K_u z)\sin(K_{ny} z)(K_u^2 - K_{ny}^2) + \frac{K_y}{K_u^2}(K_u^2 - K_{ny}^2)^2 \cosh(K_y Y)\sin(K_u z)}{-Y_0 K_u K_{ny} \sinh(K_y Y)(2K_u K_{ny})\sin(K_u z)\cos(K_{ny} z) - Y_0 K_u K_{ny} \sinh(K_y Y)(K_u^2 - K_{ny}^2)\cos(K_u z)\sin(K_u z) + Y_0' K_u \sinh(K_y Y)\cos(K_u z)\cos(K_{yn} z) + \frac{K_y}{K_u^2} \ldots}$$

Can't do it