Two strings of linear mass density $\mu_1 = 10\ g/m$ and $\mu_2 = 30\ g/m$, respectively, are joined together at the origin. A sinusoidal wave with the following displacement

$$f(z,t) = 0.30 \times 10^{-3}\, cos[20\ z - 200\ t]$$

is travelling from string 1 towards string 2. Here f and z in meters and t in seconds. Use Mathematica to plot the displacement of the resultant wave at $t = 0$ in the range between $z = -1.0\ m$ to $z = 1.0\ m$. Use $-.35\ mm$ to $0.35\ mm$ as your range for the vertical scale. In the same plot, show the incident wave and the reflected wave.