Phys 273 - Formula Sheet #3

$$Z = \frac{F}{\dot{y}} = \frac{T}{v_p} = \rho v_p$$

$$\frac{A_2}{A_1} = \frac{2Z_1}{Z_1 + Z_2}, \quad \frac{B_1}{A_1} = \frac{Z_1 - Z_2}{Z_1 + Z_2}$$

$$P = \frac{1}{2} Z \omega^2 A^2$$

$$v = \frac{1}{\sqrt{L_0 C_0}}, \; Z_0 = \sqrt{\frac{L_0}{C_0}}$$

$$\frac{V_-}{V_+} = \frac{Z_L - Z_0}{Z_L + Z_0}, \quad \frac{V_L}{V_+} = \frac{2Z_L}{Z_L + Z_0}, \; \frac{I_-}{I_+} = \frac{Z_0 - Z_L}{Z_0 + Z_L}, \; \frac{I_L}{I_+} = \frac{2Z_0}{Z_L + Z_0}$$

$$y(x,t) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\infty} dk A(k) e^{i(kx - \omega(k)t)}$$

$$v_p \equiv \frac{\omega(k)}{k}, \; v_g = \frac{d\omega}{dk}$$