$M_w = \frac{\sum w_i m_i}{\sum w_i} = \frac{\sum n_i m_i m_i / \sum n_i}{\sum n_i m_i / \sum n_i} = \frac{\sum_i f_i (m_i)^2}{M_R}$	$h = N^{0.5} \times L$	$F_i = fi.v_i$ $f_i = 6\pi\eta r$
$J_i = C_i V_i \Rightarrow C_i V_i = L_i N_0 F \Rightarrow L_i = \frac{C_i V_i}{N_0 F}$	$J_i = -L_i \partial M_i / \partial x$	$\partial C_i / \partial t = -\partial J_i / \partial x$
$\eta_r = \eta / \eta_0 = (1 + a\phi + b\phi^2 + \cdots)$	$F = \eta A \partial u / \partial y$	$\tau = \eta \partial u / \partial y$
$\eta_r = \eta / \eta_0 = 1 + a\bar{v}.C + b(\bar{v}.C)^2 + \cdots.$	$[\eta] = \lim_{c \to 0} (\eta_{sp} / C) \cong a\bar{v}$	$\eta = \frac{\pi h g \rho t r^4}{8 \times lv}$
$J = -D \partial C / \partial x$	$U = \frac{v}{E} = \frac{Ze}{f}$	$\frac{d^2x}{dt^2} = -\frac{g}{l}x$
$\frac{dV}{dt} = A_{aorta} v_{aorta} = A_{capillaries} v_{capillaries} = \cdots$	$v(r) = \frac{\Delta P (R^2 - r^2)}{4\eta L}$	$x = c\cos(\sqrt{\frac{g}{l}} t)$
$T = \pi \sqrt{\frac{2}{3}} \sqrt{\frac{l}{g}}$	$P_{net} = Ae\sigma(T^4 - T_{Ambient}^4)$	$P = \frac{kA(T - T_{Ambient})}{d}$
I (intensity) = $\frac{\text{work done by pressure}}{\text{Area} \cdot \text{time}}$ $= \frac{F\Delta x}{A\Delta t}$ = P v	dB change = $10 \log_{10}(I_{final}/I_{initial})$ $= 10 \text{ Log}_{10}(1000)$ $= 30$ dB	$L = \frac{(2n-1)}{4}\lambda \quad n = 1,2,\ldots.$

$n = \frac{c}{v} \qquad v = f \bullet \lambda.$	$\frac{1}{f} = \frac{1}{s} + \frac{1}{s'}$	$\frac{1}{f} = (n_{lens} - n_{medium})\left(\frac{1}{R_1} - \frac{1}{R_2}\right)$
$\frac{1}{f_{total}} = \frac{1}{f_{lens\ 1}} + \frac{1}{f_{lens\ 2}} + \cdots$	$\frac{Image\ height}{Object\ height} = \frac{Image\ Distance}{Object\ Distance}$	$E_{photon} = \frac{hc}{\lambda_{photon}}$
$E_{photon} = h\nu$	$\lambda_{photon} = \frac{8mcL^2}{h(j^2 - i^2)}$	$p = Z v$ where p= particle pressure v= particle velocity Z= acoustic impedance
$I = \frac{1}{2} c\rho v_0^2 \equiv \frac{1}{2} Z v_0^2 \equiv \frac{Z^2 v_0^2}{2Z} \equiv \frac{p^2}{2Z}$	$\frac{\sin\theta_i}{\sin\theta_t} = \frac{c_1}{c_2}$	$\frac{p_r}{p_i} = \frac{Z_2 - Z_1}{Z_2 + Z_1}$ and $\frac{p_t}{p_i} = \frac{2Z_2}{Z_2 + Z_1}$
$\frac{I_r}{I_i} = \left(\frac{Z_2 - Z_1}{Z_2 + Z_1}\right)^2$ and $\frac{I_t}{I_i} = \frac{4Z_1 Z_2}{(Z_2 + Z_1)^2}$	$A_I = \frac{10}{x} \log \frac{I_1}{I_2}$	$d_{min} = \frac{c}{2f}$

$v = \frac{x}{\left(\frac{\rho_{axon} x}{\pi r^2}\right)(c 2\pi r x)}$ $= \frac{r}{2\rho_{axon} c x}$	$v = v_o e^{\frac{-x}{\lambda}}$	$v = \frac{x}{t} = \frac{x}{R_{axon} C}$