

5.5 6 part 1

$$\mu^2 \left(\mu - \frac{\Delta V}{2\rho} \right) = \frac{16\omega^2}{(4\omega + 1)^2}$$

$$= \frac{16\omega^2}{16\omega^2 + 8\omega + 1}$$

$$16\omega^2 \mu^2 \left(\mu - \frac{\Delta V}{2\rho} \right) + 8\omega \mu^2 \left(\mu - \frac{\Delta V}{2\rho} \right) + \mu^2 \left(\mu - \frac{\Delta V}{2\rho} \right) = 16\omega^2$$

$$\omega^2 [16(\mu^2(\mu - \frac{\Delta V}{2\rho}) - 1)] + \omega [8\mu^2(\mu - \frac{\Delta V}{2\rho})] + \mu^2(\mu - \frac{\Delta V}{2\rho}) = 0$$

$$\omega = \frac{-8\mu^2(\mu - \frac{\Delta V}{2\rho}) \pm \sqrt{64\mu^4(\mu - \frac{\Delta V}{2\rho})^2 - 64\mu^4(\mu - \frac{\Delta V}{2\rho})^2 + 64\mu^2(\mu - \frac{\Delta V}{2\rho})}}{32(\mu^2(\mu - \frac{\Delta V}{2\rho}) - 1)}$$

$$\omega = \frac{-8\mu^2(\mu - \frac{\Delta V}{2\rho}) \pm 8\mu(\mu - \frac{\Delta V}{2\rho})^{1/2}}{32(\mu^2(\mu - \frac{\Delta V}{2\rho}) - 1)}$$

$$\omega = \frac{-\frac{1}{4}\mu^2(\mu - \frac{\Delta V}{2\rho}) \pm \frac{1}{4}\mu(\mu - \frac{\Delta V}{2\rho})^{1/2}}{\mu^2(\mu - \frac{\Delta V}{2\rho}) - 1} \cdot \frac{(\mu - \frac{\Delta V}{2\rho})^{-1/2}}{(\mu - \frac{\Delta V}{2\rho})^{-1/2}}$$

$$\omega = \frac{-\frac{1}{4}\mu^2(\mu - \frac{\Delta V}{2\rho})^{1/2} \pm \frac{1}{4}\mu}{\mu^2(\mu - \frac{\Delta V}{2\rho})^{1/2} - (\mu - \frac{\Delta V}{2\rho})^{-1/2}} \cdot \frac{4\mu^{-1}}{4\mu^{-1}}$$

$$\omega = \frac{-\mu(\mu - \frac{\Delta V}{2\rho})^{1/2} \pm 1}{4\mu(\mu - \frac{\Delta V}{2\rho})^{1/2} - 4\mu^{-1}(\mu - \frac{\Delta V}{2\rho})^{-1/2}}$$

$$\omega = \frac{\mu \sqrt{\mu - \frac{\Delta V}{2\rho}}}{4(\mu \sqrt{\mu - \frac{\Delta V}{2\rho}} \pm 1)}$$