5.5

B

$$\omega = \frac{\mu + \sqrt{\mu - \Delta V/2\varrho}}{4(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1)}$$

$$\mu - \frac{\Delta V}{2\varrho} - \frac{\omega}{\hat{\sigma}_x^2} = \frac{4\omega}{(4\omega+1)\mu^2}$$

$$\mu^2\left(\mu - \frac{\Delta V}{2\varrho}\right) - \left(\frac{\mu^2}{\hat{\sigma}_x^2}\right)\omega = \frac{4\omega}{4\omega+1}$$

$$4\omega+1 = 4\left(\frac{\mu + \sqrt{\mu - \Delta V/2\varrho}}{4(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1)}\right) + 1$$

$$= \frac{4\mu + \sqrt{\mu - \Delta V/2\varrho} + 4(\mu(\sqrt{\mu - \Delta V/2\varrho} + 1))}{4(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1)}$$

$$= \frac{8\mu + \sqrt{\mu - \Delta V/2\varrho} + 4}{4\mu + \sqrt{\mu - \Delta V/2\varrho} + 4}$$

$$\frac{4\omega}{4\omega+1} = \frac{4\mu + \sqrt{\mu - \Delta V/2\varrho}}{4(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1)} \cdot \frac{4(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1)}{8\mu + \sqrt{\mu - \Delta V/2\varrho} + 4}$$

$$\frac{4\omega}{4\omega+1} = \frac{\mu + \sqrt{\mu - \Delta V/2\varrho}}{2\mu + \sqrt{\mu - \Delta V/2\varrho} + 1} \qquad \frac{\mu^2}{\hat{\sigma}_x^2}\omega = \left(\frac{\mu^2}{\hat{\sigma}_x^2}\right)\frac{\mu + \sqrt{\mu - \Delta V/2\varrho}}{4(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1)}$$

$$\mu^2\left(\mu - \frac{\Delta V}{2\varrho}\right) - \left(\frac{\mu^2}{\hat{\sigma}_x^2}\right)\left(\frac{\mu + \sqrt{\mu - \Delta V/2\varrho}}{4(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1)}\right) = \frac{\mu + \sqrt{\mu - \Delta V/2\varrho}}{2\mu + \sqrt{\mu - \Delta V/2\varrho} + 1}$$

$$\mu\left(\mu - \frac{\Delta V}{2\varrho}\right) - \left(\frac{\mu^2}{\hat{\sigma}_x^2}\right)\frac{1}{4(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1)} = \frac{1}{2\mu + \sqrt{\mu - \Delta V/2\varrho} + 1}$$

$$\left(2\mu + \sqrt{\mu - \Delta V/2\varrho} + 1\right)\left(4\mu + \sqrt{\mu - \Delta V/2\varrho} + 1\right)\mu\left(\mu - \frac{\Delta V}{2\varrho}\right) - \left(\frac{\mu^2}{\hat{\sigma}_x^2}\right)\left(2\mu + \sqrt{\mu - \Delta V/2\varrho} + 1\right) = 4\left(\mu + \sqrt{\mu - \Delta V/2\varrho} + 1\right)$$