$\int \phi(x) = \sqrt{x}$ $\int f(x) dx = \int f(x) dx = \int f(x) dx = \int f(x) dx$ $\int f(x) dx = \int f(x) dx =$ Othorde teglor ggs volicustine

- fx

- 2 orth Taylorly auston. $\phi(x) \approx \phi(nx) + (x-nx)\phi(nx) + \frac{1}{2}(x-nx)\phi(nx)$ $\phi'(x) = \frac{1}{2\sqrt{x}} \qquad \phi''(x) = \frac{-1}{4} \chi^{-3/2}$ Example 28 X~ Poi(u), 1Ex=n, Vax=n $Y = \phi(x) = \sqrt{x}, \ \phi((x) = \frac{1}{2}x^{-2}, \ \phi''(x) = -\frac{1}{4}x^{-3/2}$ $|E[Y] \approx \phi(\mu_X) + \frac{1}{2} \phi''(\mu_X) \cdot \sigma_X^2$ $= \sqrt{\mu_X} + \frac{1}{2} \cdot (-\frac{1}{4} \mu^{-3/2}) \cdot \mu$ $= \sqrt{n} - \frac{1}{r\sqrt{n}}$ $\sqrt{n} = \left(\frac{1}{r\sqrt{n}}\right)^{2} \cdot \sigma_{x}^{2} = \left(\frac{1}{2\sqrt{n}}\right)^{2} \cdot n = \left(\frac{1}{4}\right)^{2}$ Does not degant on m: we call of a voriance - stabilizing transformation.