

Name:

Quiz 12, Attempt 1

If X and Y are i.i.d. $N(5,2)$, what is $\text{cov}(X+Y, X-Y)$?

$$= \text{cov}(X, X) - \text{cov}(Y, Y) = 0$$

$E[(X+Y)(X-Y)]$?

$$E(X^2 - Y^2) = E(X^2) - E(Y^2) = 0$$

$$f(x) = x e^{-x}$$
$$f'(x) = e^{-x} - x e^{-x}$$

Quiz 10, Attempt 2

16. Consider a random sample from a Poisson distribution, $X_i \sim \text{POI}(\mu)$.

Find the asymptotic normal distribution of $\bar{X}_n \exp(-\bar{X}_n)$

$$N\left(\mu e^{-\mu}, \left[e^{-\mu}(1-\mu)\right]^2 \frac{\mu}{n}\right)$$