No.
Date

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[1]

$z = \frac{x-\mu}{\sigma}$, $f_z(x) = e^{-\frac{1}{2}x^2} \cdot \frac{1}{\sqrt{2\pi}}$

$E(z) = 0$, $E(z-\mu)^2 = 1$

$E(z_0 + z_1) = 0$; $E(z_0 + z_1 - \mu)^2 = 1+1 = 2$

(b) $Q_1 = z^2$ : $\chi^2(df=1)$

(c) $Q_2 = z^2 + z_2^2$ : $\chi^2(df=2)$

[2]

(a) $P(z_0 + z_1 \le 1) = 0.6914$, (1-St, norm sf (1, 0, 1))

(b) $P(z_0^2 \le 1) = 0.843$, (1-St, norm sf (1, 0, 1))

(c) $P(z_1^2 + z_2^2 \le 1) = 0.6914$, (1-St, norm sf (1, 0, 2))

(d) $P\left(\frac{z_0}{z_1} \le 1\right)$

[3]

(a) $\mu_{\bar{x}_{10}} = 65$, $\frac{\sigma^2_{\bar{x}_{10}}}{n} = \frac{3^2}{25} = \frac{9}{25}$, $z \frac{\bar{x}_{10} - 65}{\frac{3}{5}}$ 4.7%

$P(\bar{x}_{10} \le 64) = P\left(\frac{\bar{x}_{10} - 65}{\frac{3}{5}} \le \frac{64-65}{\frac{3}{5}}\right) = P(z \le -1.67)$

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