112. The company's Scientific and Research Advisory Panel is ... head of ____ scientists directly ... president.

20.

(1)

$\bar{x} = 7.67 \quad \bar{y} = 6.78 \quad s_1^2 = 9.29 \quad s_2^2 = 21.15$

$$v = \frac{\left(\frac{9.29^2}{9} + \frac{21.15^2}{9}\right)^2}{\frac{\left(\frac{9.29^2}{9}\right)^2}{8} + \frac{\left(\frac{21.15^2}{9}\right)^2}{8}} \approx 10.96 \approx 11$$

$(0.89 - 2.201 \times 7.9,\ 0.89 + 2.201 \times 9.9)$

$= (-16.06,\ 19.84)$ ✗

(2)

$1 - \alpha = 0.9 \quad \chi^2_{\frac{\alpha}{2}}(n_1 - 1) = \chi^2_{0.05}(8) = 15.51$

$\chi^2_{1-\frac{\alpha}{2}}(n_1 - 1) = \chi^2_{0.95}(8) = 2.73$

$$\left(\sqrt{\frac{8 \times 9.29^2}{\chi^2_{0.05}(8)}},\ \sqrt{\frac{8 \times 9.29^2}{\chi^2_{0.95}(8)}}\right) = (6.66,\ 15.87)$$ ✗

(3)

$1 - \alpha = 0.9 \quad F_{1-\frac{\alpha}{2}}(n_1 - 1, n_2 - 1) = F_{0.05}(8, 8) = 3.44$

$$F_{0.95}(8, 8) = \frac{1}{F_{0.05}(8, 8)} \approx 0.29$$

$$\left(\frac{9.29^2}{21.15^2} \times \frac{1}{3.44},\ \frac{9.29^2}{21.15^2} \times \frac{1}{0.29}\right)$$

$= (0.06,\ 0.66)$

start
get.

the next page. →

科別：Week5

題次：＿＿＿＿年＿＿班 座號：＿＿姓名：＿＿＿＿＿＿得分：＿＿＿＿

9. (1) 母體是常態分配，母體標準差 σ 之點估計為 $s=\sqrt{\frac{\sum x_i^2 - n\bar{x}^2}{n-1}}$

$\sqrt{\frac{1284-6\times14.3^2}{5}} = \sqrt{10.38} = 3.22$ ※

(2) $1-\alpha = 0.9$ $\frac{\alpha}{2} = 0.05$ $6-1=5$ $\chi^2_{0.05}(5)=11.07$, $\chi^2_{0.95}(5)=1.15$

$\left(\sqrt{\frac{5\times10.38}{\chi^2_{0.05}(5)}}, \sqrt{\frac{5\times10.38}{\chi^2_{0.95}(5)}}\right) = \left(\sqrt{\frac{51.9}{11.07}}, \sqrt{\frac{51.9}{1.15}}\right) = (2.17, 6.72)$ ※

18. (1) $\bar{x} = (3.5+2.4+3.2+2.5+4.8+5.5+3.4+4.5+4.3+5.8)/10 = 3.99$

(2) $1-\alpha = 0.95$, $\frac{\alpha}{2} = 0.025$ $n-1=9$ $s^2 = \frac{141.93 - 15.92\times10}{9} = 1.39$

$s = 1.18$

$t_{\frac{\alpha}{2}}(n-1) = t_{0.025}(9) = 2.262$

$\bar{x} \pm t_{\frac{\alpha}{2}}(n-1)\frac{s}{\sqrt{n}}$

$\left(3.99 - 2.262\frac{1.18}{\sqrt{10}}, 3.99 + 2.262\frac{1.18}{\sqrt{10}}\right) = (3.15, 4.83)$ ※

(3) $1-\alpha = 0.95$, $\frac{\alpha}{2} = 0.025$ $\chi^2_{\frac{\alpha}{2}}(n-1) = \chi^2_{0.025}(9) = 19.02$

① $\left(\frac{9\times1.39}{19.02}, \frac{9\times1.39}{2.7}\right) = (0.66, 4.63)$ ※ $\chi^2_{0.975}(9) = 2.7$

② $\left(\sqrt{\frac{9\times1.39}{19.02}}, \sqrt{\frac{9\times1.39}{2.7}}\right) = (0.81, 2.15)$ ※

31. $n=9$

(1) $1-\alpha = 0.9$ $\chi^2_{0.05}(8) = 15.51$ $\chi^2_{0.95}(8) = 2.73$

$\sqrt{\frac{(9-1)s^2}{15.51}} = 6.66$, $s = 9.27$ ※

(2) $\left(\frac{(n-1)s^2}{\chi^2_{0.025}(8)}, \frac{(n-1)s^2}{\chi^2_{0.975}(8)}\right) = \left(\frac{(9-1)\times9.27^2}{17.53}, \frac{(9-1)\times9.27^2}{2.18}\right)$

$= (39.22, 315.55)$ ※