9.

(1) $n=6$

$\bar{x}=14.33$

$S\sqrt{\frac{1+16+25+1+9+0}{5}} \Rightarrow \sqrt{\frac{\Sigma x^2 - n\bar{x}^2}{n-1}}$

$=\sqrt{10.4}$

$=3.22$

(2) $1-\alpha=0.90$

$\frac{\alpha}{2}=0.05$

$n-1=5$

$\chi^2_{\frac{\alpha}{2}}(n-1)=\chi^2_{0.05}(5)=11.07$

$\chi^2_{1-\frac{\alpha}{2}}(n-1)=\chi^2_{0.95}(5)\ 1.15$

$\sqrt{\frac{5\times 10.38}{11.07}}\ \sqrt{\frac{5\times 10.38}{1.15}}=(2.17, 6.72)$

(3) $\frac{S_1^2}{S_2^2}\times\frac{1}{F_{\frac{\alpha}{2}}(n_1-1,n_2-1)}\ ,\ \frac{S_1^2}{S_2^2}\times\frac{1}{F_{1-\frac{\alpha}{2}}(n_1-1)(n_2-1)}=(6.66, 15.87)$

$=\left(\frac{9.27^2}{21.15}\times\frac{1}{3.44}\ ,\ \frac{9.27^2}{21.15}\times\frac{1}{\frac{1}{3.44}}\right)$

$=(0.06, 0.66)$

20. $V=\frac{\left(\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}\right)}{\frac{\left(\frac{S_1}{n_1}\right)^2}{(n_1-1)}+\frac{\left(\frac{S_2}{n_2}\right)^2}{(n_2-1)}}$

(1) $n_1=9\ \bar{x}=7.67\ S_1=9.27$

$n_2=9\ \bar{y}=6.78\ S_2=21.15$

$=10.96\pm 1$

$(\bar{x}-\bar{y})\pm t_{\frac{\alpha}{2}}(v)\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}$

$=(7.67-6.78)\pm t_{0.025}\sqrt{\frac{9.27^2}{9}+\frac{21.15^2}{9}}$

$=0.89\pm 16.95$

$=(17.84, -16.06)$

(2) $\sqrt{\frac{8\times 9.27^2}{\chi^2_{0.05}(8)}}\ \sqrt{\frac{8\times 9.27^2}{\chi^2_{0.95}(8)}}$

$=\sqrt{\frac{687.46}{15.51}}\ \sqrt{\frac{687.46}{2.73}}$