Terceira Lista de Exercícios -Estatística

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Data limite:Prova de Estatstica

Questão 2

$\overline{x} = 162,66$
s=33,77
a)95% $\rightarrow$ t=1,96

$L = 162,66 \pm 1,96\frac{33,77}{\sqrt{80}}$

L=[155,26;170,06]

b)$\sigma = 30$
$L = 162,66 \pm 1,96\frac{30}{\sqrt{80}}$

L=[156,08;169,23]
c)$L_1 = \frac{(n-1)s^2}{v_{1-\frac{\alpha}{2},n-1}}$
$L_2 = \frac{(n-1)s^2}{v_{\frac{\alpha}{2},n-1}}$
$L_1 = \frac{79.30^2}{32,3574} = 2197,33$

$L_2 = \frac{79.30^2}{71,4202} = 995,52$
$\sqrt{L_1} = 46,87$
$\sqrt{L_2} = 31,85$
$[31,55; 46,87]$
d)
Subamostra retirada

$$\begin{bmatrix} 194 & 133 \\ 184 & 135 \\ 165 & 172 \\ 145 & 171 \\ 160 & 237 \end{bmatrix}$$

$\overline{\overline{x}} = 169,6$

Matriz das variâncias

$$\begin{bmatrix} 595.36 & 1333.56 \\ 207.36 & 1197.16 \\ 21.16 & 5.76 \\ 605.16 & 1.96 \\ 92.16 & 4542.76 \end{bmatrix}$$

$\sum s^2 = 8608.4$

$\frac{\sum s^2}{n-1} = \frac{8608.4}{9} = 956.48$

$s = 30.927$

$L = 169,6 \pm 1,96 \frac{30.927}{\sqrt{10}}$

$[150.43; 188.77]$

e)$s_1^2 = \frac{9(30.927)^2}{2,7} = 3188.26$

$s_2^2 = \frac{9(30.927)^2}{19.0228} = 452.53$

$\sqrt{s_1^2} = 56.46; \sqrt{s_2^2} = 21.27$
$[21.27; 56.46]$

Questão 3
a)Os intervalos de confiança aumentaram com um número de elementos de amostra menor.

b)

Questão 4
$\frac{6}{50} = 12\%$