

1. $N_{\text{per question}} = N/n = 33 / 7 = 4.7 / \text{question}$
 or $N_{\text{per question}} = N/n = 33 / 10 = 3.3 / \text{question}$
 $\text{Time}_{\text{per point}} = T/N = 50/33 = 1.5 / \text{minute}$

Strategy II will reduce the variance in $\text{Time}_{\text{per point}}$

If the assumption is true, then increasing $\text{Var}(\text{Time}_{\text{per point}})$ will reduce the points gained.

2.

	Symbol	Units	Dimensions
response variable	<u>Width</u>	<u>mm</u>	<u>L</u>
explanatory variable	<u>Elev</u>	<u>meter</u>	<u>L</u>

3. $\frac{1}{r^2} = 1 + \frac{df_{\text{res}}}{df_{\text{model}}} \cdot \frac{1}{F}$

4. The model is unacceptable if the residual versus fit plot shows bowls or arches.

5. The p-value computed from an F distribution cannot be trusted if the residuals are not normal: i.e. if the histogram of residuals does not resemble a normal distribution.

6a. $D = \text{bite depth}$ $D = \beta_0 + \beta_V * V + \beta_{Sp} * Sp + \beta_{V*Sp} * v * Sp + \epsilon$
 $V = \text{body size}$
 $Sp = \text{species}$

6c.

Source	df
Species	2
Body size	1
Species * Body Size	2
Error	15
Total	20