$\boxed{1}$

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i$$

$$\hat{\beta}_0 = \bar{y} - \beta_1 \bar{X}$$

$$\hat{\beta}_1 = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sum_{i=1}^{n} (x_i - \bar{x})^2}$$

Stumps X_i	Beetle leaves Y_i
2	10
2	30
1	12
3	24
4	40
1	11
5	56
3	40
1	8
2	14

$\bar{X} = 2{,}4$ $\bar{y} = 24{,}5$

$\hat{\beta}_1 =$

Model 2: $\hat{\beta}_{LS} = 2$

$$Q(\beta) = \sum^{n} (y_i - \beta x_i)^2 \qquad E y_i = \beta x_i$$

$$\frac{dQ(\beta)}{d\beta} = 2 \sum^{n} (y_i - \beta x_i)(-x_i) = 0$$

$$-\sum^{n} y_i x_i + \beta \sum^{n} x_i^2 = 0$$

$$\beta = \frac{\sum^{n} y_i x_i}{\sum x_i^2} = \frac{771}{74} = 10{,}42$$

$\boxed{2}$

School	Rank	Rank	C_i	D_i
A		12	0	11
B		9	2	8
C		1	9	0
D		7	3	5
E		3	6	1
F		10	1	5
G		11	0	5
H		8	0	4
I		2	3	0
J		6	0	2
K		4	1	0
L		5	—	-
Σ			25	41

$$\text{Kandell's } \tau = \frac{C-D}{C+D} = \frac{25-41}{25+41} = -0{,}24$$