**SPSS Output for Problem D: Regression Problem  
  
Item 1: Case Summaries**

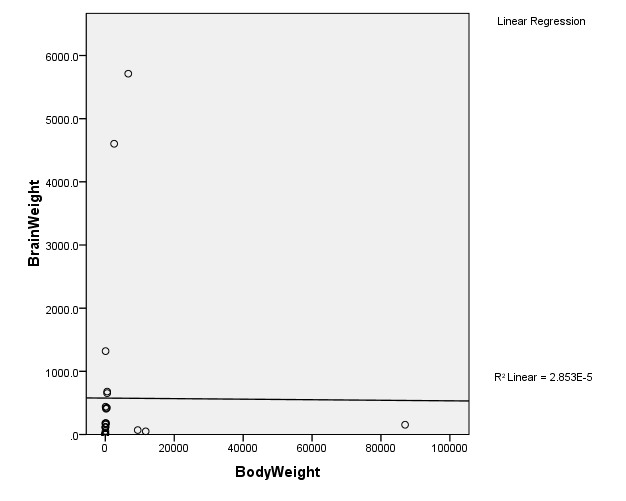
|  | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | | Animal | BodyWeight | BrainWeight | LogBodyWeight | LogBrainWeight |
| 1 | | Brachiosaurus | 87000 | 154.5 | 4.94 | 2.19 |
| 2 | | Rat | 0 | 1.9 | -.55 | .28 |
| 3 | | Beaver | 1 | 8.1 | .13 | .91 |
| 4 | | Cow | 465 | 423.0 | 2.67 | 2.63 |
| 5 | | Grey Wolf | 36 | 119.5 | 1.56 | 2.08 |
| 6 | | Goat | 28 | 115.0 | 1.44 | 2.06 |
| 7 | | Guinea Pig | 1 | 5.5 | .02 | .74 |
| 8 | | Diplodocus | 11700 | 50.0 | 4.07 | 1.70 |
| 9 | | Asian elephant | 2547 | 4603.0 | 3.41 | 3.66 |
| 10 | | Donkey | 187 | 419.0 | 2.27 | 2.62 |
| 11 | | Horse | 521 | 655.0 | 2.72 | 2.82 |
| 12 | | Potar monkey | 10 | 115.0 | 1.00 | 2.06 |
| 13 | | Cat | 3 | 25.6 | .52 | 1.41 |
| 14 | | Giraffe | 529 | 680.0 | 2.72 | 2.83 |
| 15 | | Gorilla | 207 | 406.0 | 2.32 | 2.61 |
| 16 | | Human | 62 | 1320.0 | 1.79 | 3.12 |
| 17 | | African elephant | 6654 | 5712.0 | 3.82 | 3.76 |
| 18 | | Triceratops | 9400 | 70.0 | 3.97 | 1.85 |
| 19 | | Rhesus monkey | 7 | 179.0 | .83 | 2.25 |
| 20 | | Kangaroo | 35 | 56.0 | 1.54 | 1.75 |
| 21 | | Hamster | 0 | 1.0 | -.92 | .00 |
| 22 | | Mouse | 0 | .4 | -1.70 | -.40 |
| 23 | | Rabbit | 3 | 12.1 | .40 | 1.08 |
| 24 | | Sheep | 56 | 175.0 | 1.74 | 2.24 |
| 25 | | Jaguar | 100 | 157.0 | 2.00 | 2.20 |
| 26 | | Chimpanzee | 52 | 440.0 | 1.72 | 2.64 |
| 27 | | Mole | 0 | 3.0 | -.92 | .48 |
| 28 | | Pig | 192 | 180.0 | 2.28 | 2.26 |
| Total | N | 28 | 28 | 28 | 28 | 28 |
| a. Limited to first 100 cases. | | | | | | |

**Item 2: Correlation of BodyWeight with BrainWeight**

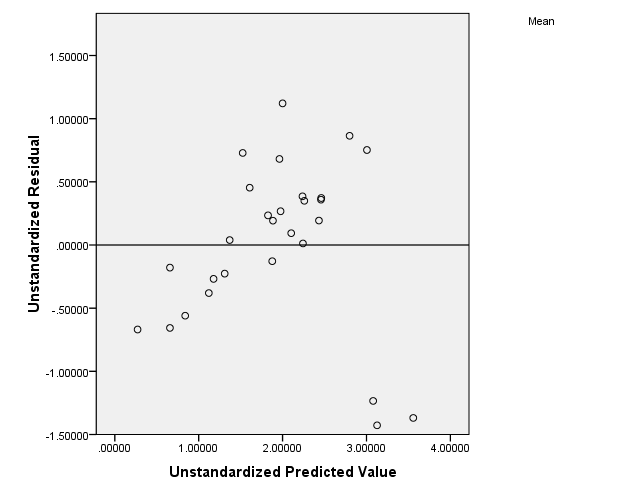
| **Descriptive Statistics** | | | |
| --- | --- | --- | --- |
|  | Mean | Std. Deviation | N |
| BodyWeight | 4278.44 | 16480.490 | 28 |
| BrainWeight | 574.521 | 1334.9292 | 28 |

| **Correlations** | | | |
| --- | --- | --- | --- |
|  | | BodyWeight | BrainWeight |
| BodyWeight | Pearson Correlation | 1 | -.005 |
| Sig. (2-tailed) |  | .978 |
| N | 28 | 28 |
| BrainWeight | Pearson Correlation | -.005 | 1 |
| Sig. (2-tailed) | .978 |  |
| N | 28 | 28 |

**Item 3: Scatterplot of BrainWeight vs. BodyWeight**



**Item 4: Scatterplot of LogBrainWeight vs. LogBodyWeight**

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**Item 5. Correlation of LogBrainWeight vs. LogBodyWeight**

| **Descriptive Statistics** | | | |
| --- | --- | --- | --- |
|  | Mean | Std. Deviation | N |
| LogBodyWeight | 1.6354 | 1.64252 | 28 |
| LogBrainWeight | 1.9219 | 1.04200 | 28 |

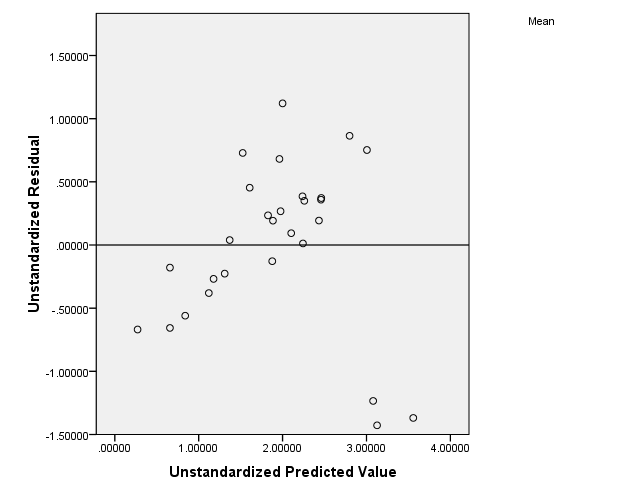
| **Correlations** | | | |
| --- | --- | --- | --- |
|  | | LogBodyWeight | LogBrainWeight |
| LogBodyWeight | Pearson Correlation | 1 | .780\*\* |
| Sig. (2-tailed) |  | .000 |
| N | 28 | 28 |
| LogBrainWeight | Pearson Correlation | .780\*\* | 1 |
| Sig. (2-tailed) | .000 |  |
| N | 28 | 28 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | |

**Item 6. Regression Model including LogBodyWeight and LogBrainWeight**

| **Model Summaryb** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | R | R Square | | | Adjusted R Square | | | Std. Error of the Estimate | | |
| 1 | .780a | .609 | | | .594 | | | .66393 | | |
| a. Predictors: (Constant), LogBodyWeight | | | | | | | | | | |
| b. Dependent Variable: LogBrainWeight | | | | | | | | | | |
| **ANOVAb** | | | | | | | | | | | | | | | |
| Model | | | Sum of Squares | | | df | | | Mean Square | | | F | | Sig. | |
| 1 | Regression | | 17.855 | | | 1 | | | 17.855 | | | 40.505 | | .000a | |
| Residual | | 11.461 | | | 26 | | | .441 | | |  | |  | |
| Total | | 29.315 | | | 27 | | |  | | |  | |  | |
| a. Predictors: (Constant), LogBodyWeight | | | | | | | | | | | | | | | |
| b. Dependent Variable: LogBrainWeight | | | | | | | | | | | | | | | |
| **Coefficientsa** | | | | | | | | | | | | | | | | |
| Model | | | | Unstandardized Coefficients | | | | | | Standardized Coefficients | | | t | | Sig. | |
| B | | | Std. Error | | | Beta | | |
| 1 | (Constant) | | | 1.112 | | | .179 | | |  | | | 6.225 | | .000 | |
| LogBodyWeight | | | .495 | | | .078 | | | .780 | | | 6.364 | | .000 | |
| a. Dependent Variable: LogBrainWeight | | | | | | | | | | | | | | | | |

| **Residuals Statisticsa** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | Minimum | Maximum | Mean | Std. Deviation | N |
| Predicted Value | .2711 | 3.5578 | 1.9219 | .81319 | 28 |
| Residual | -1.42740 | 1.12092 | .00000 | .65152 | 28 |
| Std. Predicted Value | -2.030 | 2.012 | .000 | 1.000 | 28 |
| Std. Residual | -2.150 | 1.688 | .000 | .981 | 28 |
| a. Dependent Variable: LogBrainWeight | | | | | |

**Item 7: Scatterplot for LogBrainWeight vs. LogBodyWeight Regression**



**Item 8: Normal Plot for LogBrainWeight vs. LogBodyWeight Regression  
 using Blom’s Method**

