Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure  
Model: MODEL1  
Dependent Variable: IQ

<table>
<thead>
<tr>
<th>Number of Observations Read</th>
<th>38</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Observations Used</td>
<td>38</td>
</tr>
</tbody>
</table>

### Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Value</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>1</td>
<td>2244.40784</td>
<td>2244.40784</td>
<td>6.93</td>
<td>0.0124</td>
</tr>
<tr>
<td>Error</td>
<td>36</td>
<td>11656</td>
<td>323.79057</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>37</td>
<td>13901</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Root MSE: 17.99418
- R-Square: 0.1615
- Dependent Mean: 117.23684
- Adj R-Sq: 0.1382
- Coeff Var: 15.34857

### Parameter Estimates

<table>
<thead>
<tr>
<th>Variable</th>
<th>Label</th>
<th>DF</th>
<th>Parameter Estimate</th>
<th>Standard Error</th>
<th>t Value</th>
<th>Pr &gt;</th>
<th>t</th>
<th>95% Confidence Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>Intercept</td>
<td>1</td>
<td>90.75499</td>
<td>10.47342</td>
<td>8.67</td>
<td>&lt;.0001</td>
<td></td>
<td>69.51391 111.99607</td>
</tr>
<tr>
<td>crycount</td>
<td>cry count</td>
<td>1</td>
<td>1.53635</td>
<td>0.58354</td>
<td>2.63</td>
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<td>0.35287  2.71983</td>
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Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Distribution of Residuals for IQ

- Normal
- Kernel

Residual

Percent

-60 -45 -30 -15 0 15 30 45 60 75

0 5 10 15 20 25 30
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Residual by Predicted for IQ

Predicted Value

Residual

110 120 130 140

-20 -10 0 10 20 30 40
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

RStudent by Predicted for IQ

Predicted Value
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure  
Model: MODEL1  
Dependent Variable: IQ

---

**Observed by Predicted for IQ**

- IQ values range from approximately 90 to 170.
- Predicted values range from approximately 90 to 170.

The scatter plot suggests a positive linear relationship between observed and predicted IQ values.
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Cook's D for IQ
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Outlier and Leverage Diagnostics for IQ

+ Outlier  × Leverage  △ Outlier and Leverage
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
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Q-Q Plot of Residuals for IQ
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Residual-Fit Spread Plot for IQ

![Residual-Fit Spread Plot for IQ](image_url)
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Residuals for IQ

Residual

-20
-10
0
10
20
30
40

Diamond
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Fit Diagnostics for IQ

- Residual vs Predicted Value
- RStudent vs Predicted Value
- RStudent vs Leverage
- Cook's D vs Observation

Fit-Mean vs Residual

Histogram of Residuals

- Observations: 38
- Parameters: 2
- Error DF: 36
- MSE: 223.79
- R-Square: 0.1615
- Adj R-Square: 0.1382
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Influence Diagnostics for IQ

Influence Diagnostics for IQ
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Residuals for IQ

Residual

cry count
Simple Linear Regression, including confidence interval for slope and all plots

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Fit Plot for IQ

- Observations: 38
- Parameters: 2
- Error DF: 36
- MSE: 323.79
- R-Square: 0.1615
- Adj R-Square: 0.1382
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
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Dependent Variable: IQ

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Analysis of Variance

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Parameter Estimates

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Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
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Distribution of Residuals for IQ

- Percent
- Residual

Normal
Kernel
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
Model: MODEL1
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Residual by Predicted for IQ

Predicted Value

Residual

-20

0

40

110 120 130 140
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

![Graph showing RStudent by Predicted for IQ](image-url)
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Observed by Predicted for IQ

Predicted Value
IQ
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Cook's D for IQ

<table>
<thead>
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<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
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</tr>
<tr>
<td>14</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
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The plot shows Cook's D values for each observation.
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

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Outlier and Leverage Diagnostics for IQ

+ Outlier  × Leverage  △ Outlier and Leverage
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Q-Q Plot of Residuals for IQ
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
Model: MODEL1
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Residual-Fit Spread Plot for IQ

Fit-Mean

Residual

Proportion Less
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Residuals for IQ

Residual

cry count

10 15 20 25 30
Simple Linear Regression, including confidence interval for slope and diagnostic plots unpacked

The REG Procedure
Model: MODEL1
Dependent Variable: IQ

Fit Plot for IQ

- Observations: 38
- Parameters: 2
- Error DF: 36
- MSE: 323.79
- R-Square: 0.1615
- Adj R-Square: 0.1382

Graph showing the fit plot with confidence limits and prediction limits.