

# Условия применения

- Линейная взаимосвязь  $X$  и  $Y$
- Нормальное распределение остатков
- Гомоскедастичность - постоянная изменчивость остатков на всех уровнях независимой переменной

[http://bitly.com/slr\\_diag](http://bitly.com/slr_diag)



# Diagnostics for simple linear regression

Select a trend:

- ☒ Linear up
- ☐ Linear down
- ☐ Curved up
- ☐ Curved down
- ☐ Fan-shaped

☒ Show residuals

This applet uses ordinary least squares (OLS) to fit a regression line to the data with the selected trend. The applet is designed to help you practice evaluating whether or not the linear model is an appropriate fit to the data. The three diagnostic plots on the lower half of the page are provided to help you identify undesirable patterns in the residuals that may arise from non-linear trends in the data.

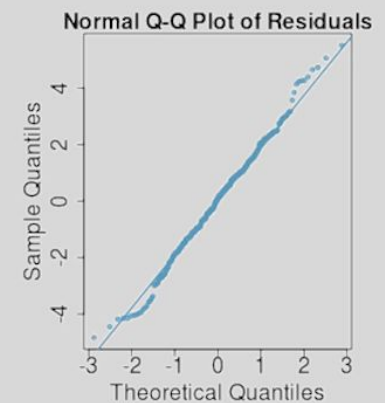
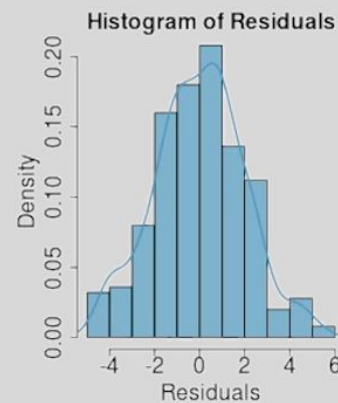
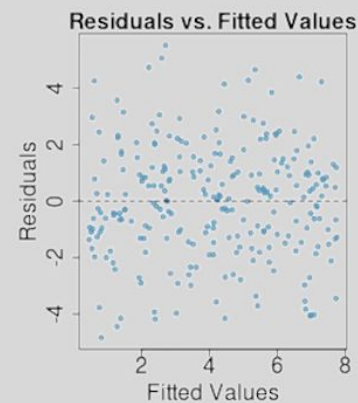
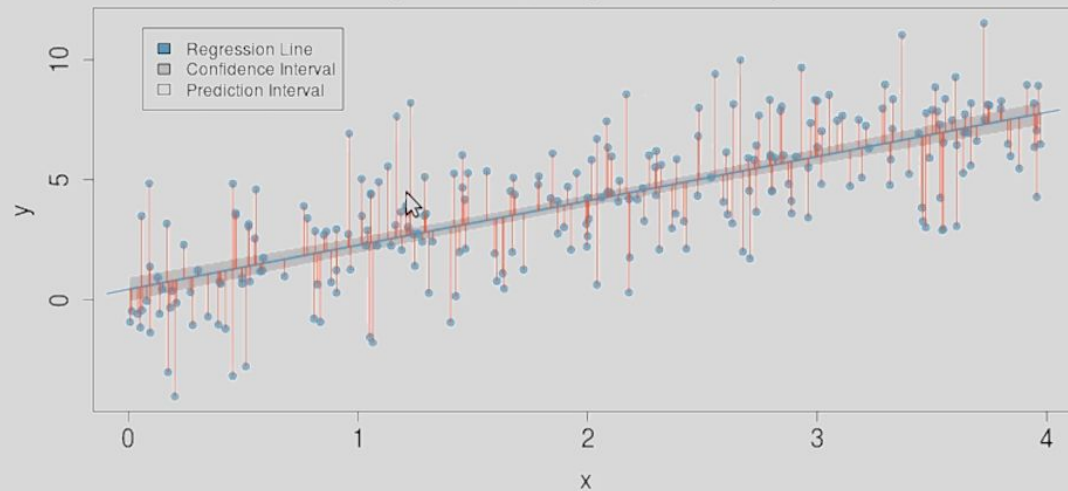
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Regression Model  
( $R = 0.7346$ ,  $R\text{-squared} = 0.5397$ )



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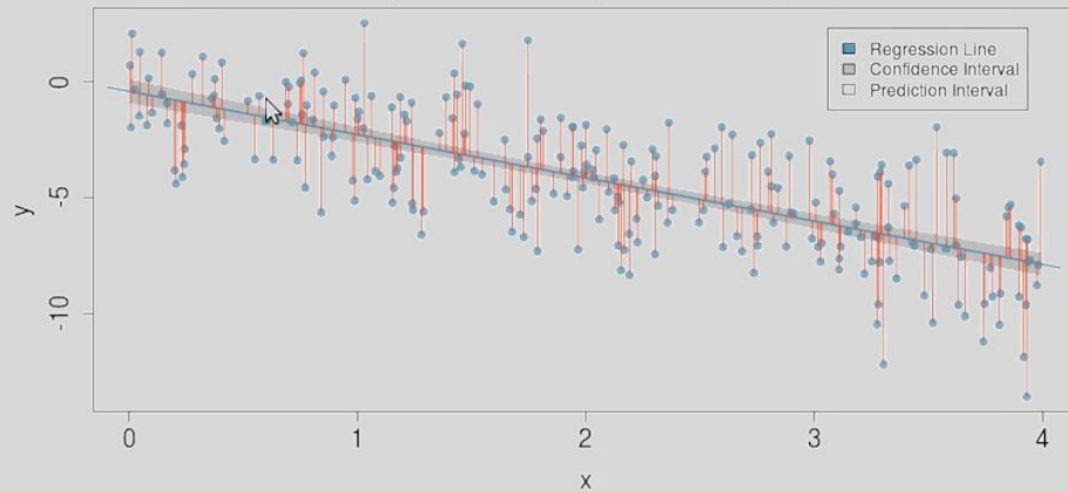
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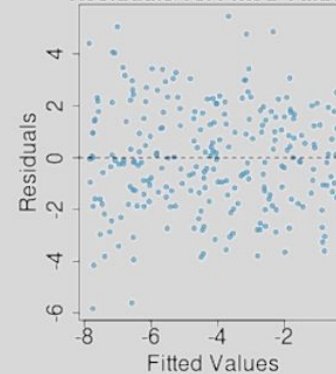
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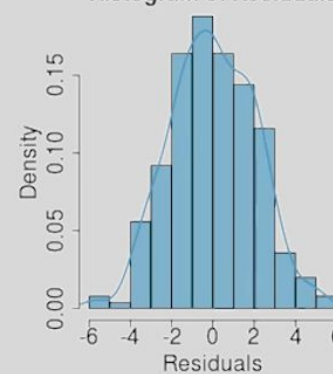
Regression Model  
( $R = -0.7284$ ,  $R\text{-squared} = 0.5306$ )



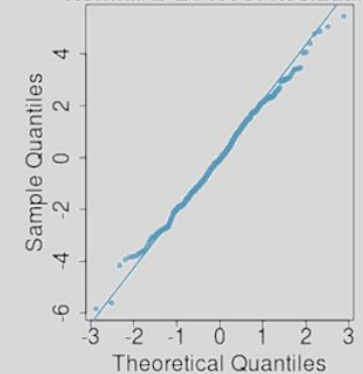
Residuals vs. Fitted Values



Histogram of Residuals



Normal Q-Q Plot of Residuals



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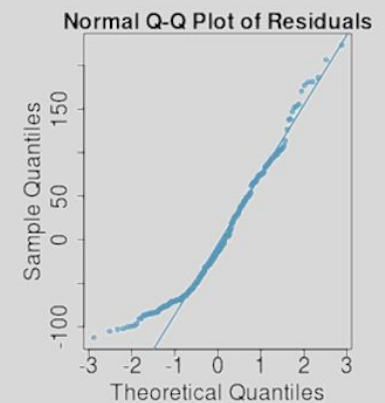
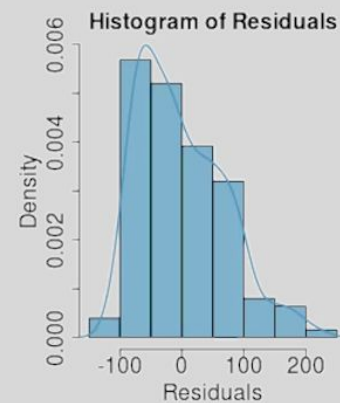
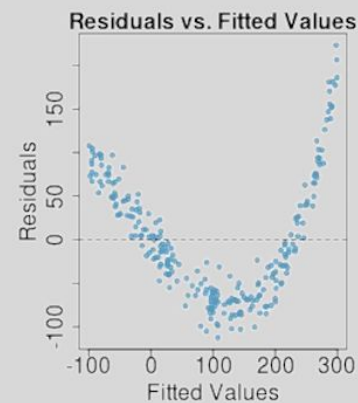
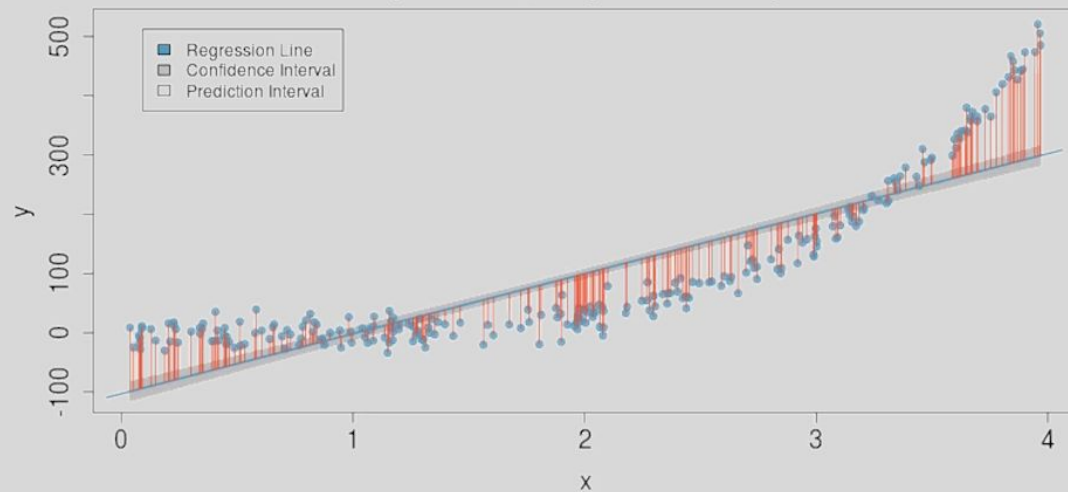
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Regression Model  
( $R = 0.8581$ ,  $R\text{-squared} = 0.7363$ )





# Diagnostics for simple linear regression

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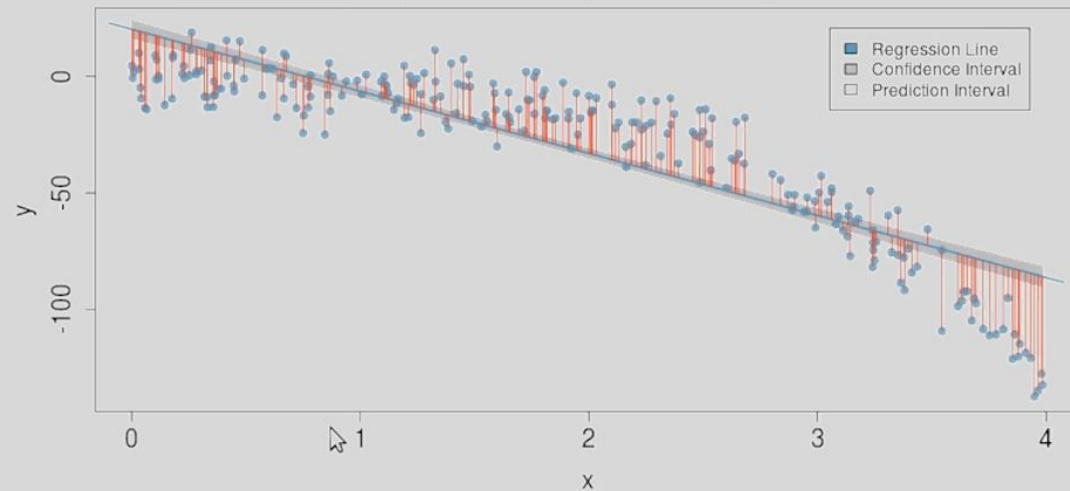
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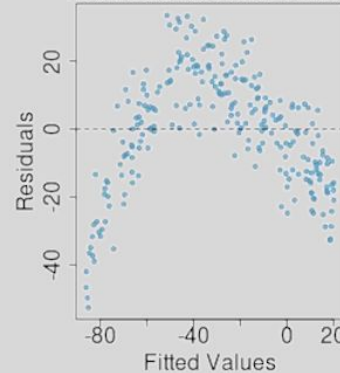
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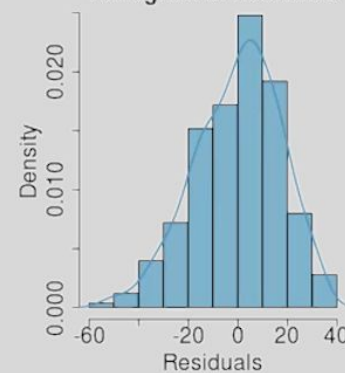
Regression Model  
( $R = -0.874$ ,  $R\text{-squared} = 0.7638$ )



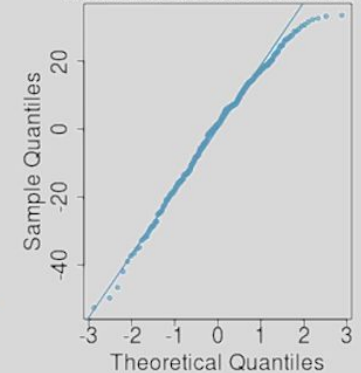
Residuals vs. Fitted Values



Histogram of Residuals



Normal Q-Q Plot of Residuals



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Regression Model  
( $R = 0.3231$ ,  $R\text{-squared} = 0.1044$ )

