Inference for Quantitative Data: Slopes

AP Statistics · Vocabulary in context

Word	Example
scatterplot /ˈskætəplɒt/	A **scatterplot** shows two numerical variables as points.
sample slope /ˈsæmpl sləʊp/	The **sample slope** b estimates the true slope. b
least-squares regression line /liːst skweəz rɪˈgreʃn laɪn/	The **least-squares regression line** makes the squared residuals as small as possible.
sampling variability /ˈsæmplɪŋ ˌveərɪəˈbɪlɪti/	**Sampling variability** means each sample gives a slightly different result.
true (population) slope /truː sləʊp/	The **true (population) slope** β is unknown. β
inference /ˈɪnfərəns/	Her wet coat supports the **inference** that she walked through rain.
linear /ˈlɪnɪə/	The relationship looks **linear**.
standard error /ˈstændəd ˈerə/	The **standard error** shows how much the sample mean might vary.
Conditions /kənˈdɪʃnz/	Check the **conditions** before you use the test.
residuals /rɪˈsɪdʒuːəlz/	The **residuals** should show no pattern.
histogram /ˈhɪstəgræm/	Draw a **histogram** with the bars touching.
in context	Always state your conclusion **in context**.
residual plot /rɪˈsɪdʒuːəl plɒt/	A **residual plot** with no pattern means a line fits well.

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curve	A **curve** in the residual plot means a line is a poor fit.
fan	A **fan** shape in the residuals means the spread is not constant.
confidence interval /ˈkɒnfɪdəns ˈɪntəvl/	A narrow **confidence interval** means the estimate is precise.
plausible /ˈplɔːzɪbl/	A value inside the interval is **plausible**.
regression /rɪˈgreʃn/	**Regression** predicts a number, such as a house price.
convincing evidence	A small p-value gives **convincing evidence** against the null hypothesis. p-value
two-sided	A **two-sided** test checks for a slope that is not zero.
observational	The data are **observational**, so we cannot claim cause and effect.
experiment /ekˈsperɪmənt/	In an **experiment**, we give treatments and measure the results.
association /əˌsəʊsɪˈeɪʃn/	There is an **association** between the two variables.
paired /peəd/	The data are **paired** because each twin is matched with the other.
procedure /prəˈsiːdʒə/	Name the **procedure** before you calculate.
test statistic /test stəˈtɪstɪk/	The **test statistic** is the value calculated from the sample and compared with the critical region.

Word	Example
degrees of freedom /dɪ'gri:z ɒv 'fri:dəm/	The **degrees of freedom** tell you which t-distribution to use. t
p-value /pi: 'vælju:/	A small **p-value** means the result would be surprising if there were no real effect.

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