

Results from linear regression of ph vs time

Analysis of Variance Table

Response: ph

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
time	1	2.85695	2.85695	112.23	5.509e-06 ***
Residuals	8	0.20365	0.02546		

Error, Within.

Results from anova of ph vs time

Analysis of Variance Table

Response: ph

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
time.f	4	3.0160	0.75400	84.529	8.879e-05 ***
Residuals	5	0.0446	0.00892		

confirms 1 df in the model: regression, t-test

ANOVA in 5 groups

change = between → 3

full = within → 5

reduced = c. total → 8

Source	df	SS	MS
change = between	3	0.159	0.053
full = within	5	0.0446	0.0089
reduced = c. total	8	0.204	

Results from linear regression of ph vs log time

Analysis of Variance Table

Response: ph

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
logtime	1	3.00647	3.00647	444.31	2.695e-08 ***
Residuals	8	0.05413	0.00677		

Null H: no lack of fit = regression model fits the means.

Alt: reg is lack of fit

For  $X = \text{time}$

$$F = \frac{0.053}{0.0089} = 5.94$$

$$p = 0.042$$

Reject  $H_0$ , evidence of lack of fit.

log time:

no evidence of lack of fit.

~~evidence that  $H_0$  correct~~ (Not appropriate interpretation)  
 can never "prove" the null hypothesis