

Week 8 — Simple regression: Wednesday exit ticket

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Name: _____

Date: _____

Instructions

Work through each item below. Write your final response in the space provided. Show enough work that another reader can follow your reasoning.

1. The PREVEND study included 500 adults aged **36–81** in the Netherlands. Cognitive function was measured by the Ruff Figural Fluency Test (RFFT, scored 0–175). Statistical software fit a simple linear regression of RFFT on age and produced this output:

Coefficient	Estimate
Intercept	137.55
Age (years)	-1.26

With $r = -0.534$ and $R^2 = 0.285$.

- (a) Write the fitted regression equation in standard form, with variables named.
- (b) Interpret the **slope** in one sentence in the units of the data, using *on average*.
- (c) The intercept is 137.55. Is the intercept a **meaningful prediction** in this context? In one or two sentences, say why or why not.
- (d) Interpret the value $R^2 = 0.285$ in one sentence.
- (e) A reader asks the team to use the equation to predict the RFFT score for a 20-year-old college student. In one or two sentences, explain why the team should refuse, and name the issue.