

Some notes on mistakes in the midterm.

1 (a): Answer from the frequentist point of view, not Bayesian.

(b) WRONG: $\hat{Y}_i = \hat{\beta}_0 + \hat{\beta}_1 X_i + \varepsilon_i$

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(d): "The errors are normally distributed, but the residuals are not."

WRONG! $\&$ Residuals are also normally distributed.

"The errors are random variables and can't be estimated"

The REALIZED VALUE of a RV can be estimated.

e_i is an estimate of the realized value of ε_i . Sometimes e_i is written $\hat{\varepsilon}_i$.

5 (b):

WRONG:

" To gain 1 MPG, the car must decrease in weight by 6000 pounds "

- Implausible numbers: most cars weigh 3000 - 5000 pounds. (more for large SUVs)
- Implication of causality?

In 1 (c)

" The residual is the distance between the point and the regression line. "

WRONG: The "distance" between a point and a line is the perpendicular distance.

The residual is the difference in Y -coordinates!