

# Competition Corner: Fit Is Not a Permission Slip

g11\_u01\_w03

Fictional paper data only; no instrument activity is requested.

1. A model  $y = 0.120x + 0.015$  is supplied for  $0 \leq x \leq 5$ . Infer  $x$  from  $y = 0.375$ , then explain why  $y = 0.900$  needs a different claim.
2. A four-point line has residuals  $-0.002, +0.001, +0.002, -0.001$ . What pattern do you see? Why is that not enough to prove every future point will fit?
3. Compare two models with equal residual size but different slope. Which may give more stable inferred  $x$  for equal vertical uncertainty?