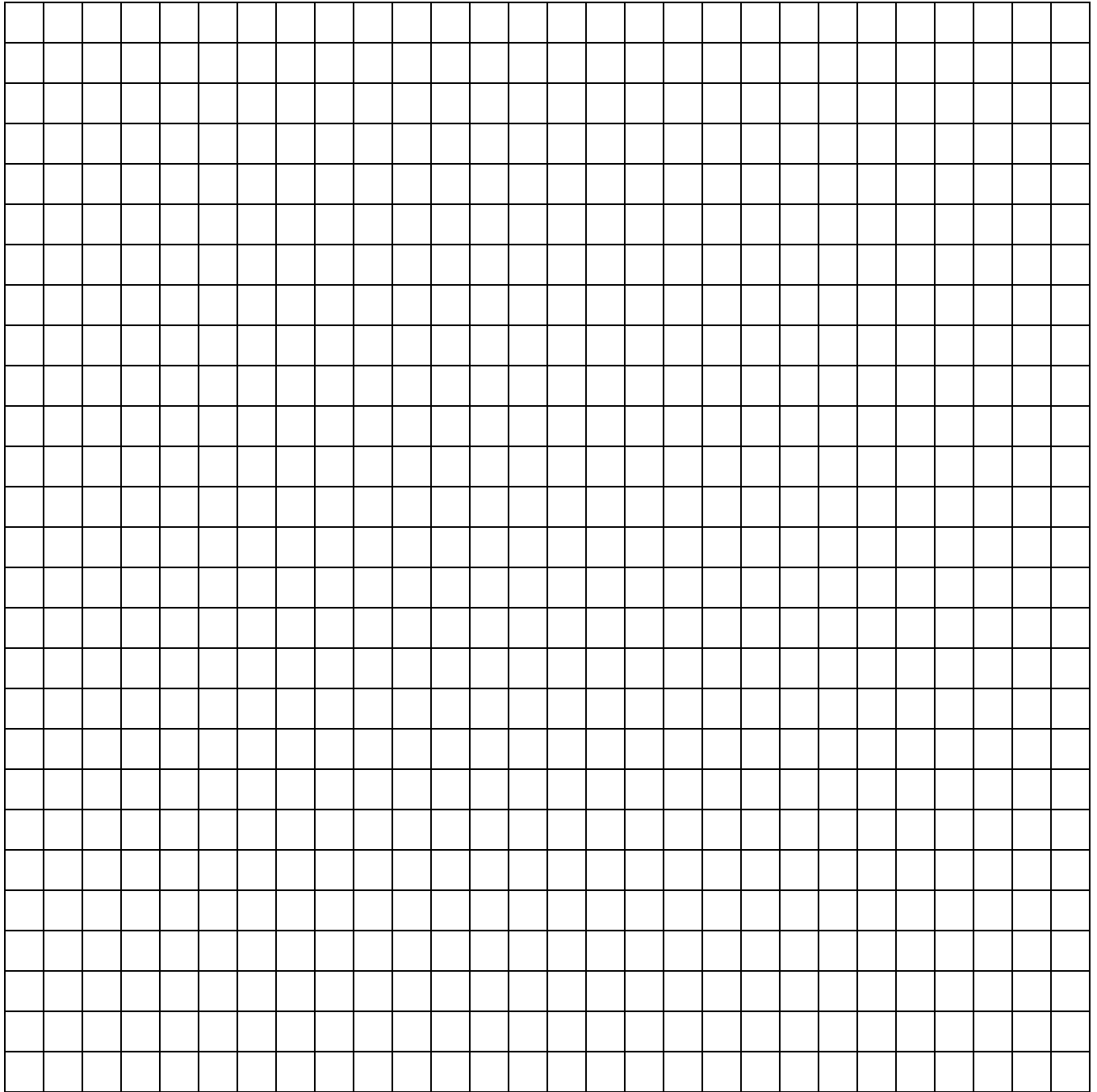


Draw five rectangles. Calculate the perimeter and area of each. Plot these numbers on the scatter plot at the front of the room.



What patterns can you detect in the scatter plot data?

How would you summarize that pattern economically?

If someone told you a rectangle had perimeter  $P$ , what predictions would you make about the area of that rectangle?

What are your explanations or hypotheses regarding the causes of the patterns?

All possible phenomena that could be inquired into

(-> subset of phenomena generated by experimental manipulation)

-> phenomenon deemed interesting for study

-> questions asked about the phenomenon

-> categories demarcated in the questions

-> observations made within those categories

-> data collected from the observations

-> patterns perceived in data

-> predictions made based on the patterns  
or hypotheses about causes

-> actions supported by predictions  
or causes

A chain of steps in scientific inquiry in which each step (indicated by an arrow ->) involves assumptions and is open for negotiation and wider influences. The dashed lines depict the possibility that desired outcomes for the later stages influence decisions made at earlier steps. (In any case, we can examine any step in light of how it shapes later steps, e.g., what kind of hypotheses about causes follow from collecting data in the chosen categories.)

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Examples to examine (time permitting) in relation to a) the figure above; and b) alternatives that remedy the problems you perceive.

1. Galton's data on similarity among relatives
2. Approval rating for Congress
3. Estimates of war deaths
4. PSA test for men in relation to prostate cancer
5. Clinicians' cutoffs for high risk-low risk and for case-not case.
6. Suicide and ability of people to hurt or kill themselves
7. Dohrenwend vs. Brown on life events
8. Schizophrenia (=common reading for week 4)
9. SES (=common reading for week 4)