Pretest for the Math-Intensive Research Methods Seminar

Name: _____ Date: _____

Give short answers to the following. Be specific where needed. If you don't know something, say so. However, if you can make a reasoned response from what you do know, go ahead.

1. Regarding research, what is an IRB?

2. Regarding research, describe "informed consent."

3. Who funds research in the US? Where does the money go? Who owns the results? Be as specific as you can.

4. How does a researcher control what is done with her research results?

5. When is research considered "socially valid?"

6. Differentiate claims of correlation between variables from claims that one construct causes another.

7. Diagram a simple causal model relating one independent variable to a dependent variable. Give an example.

8. What evidence best supports claims of causality?

9. What is a confounding variable? Give an example. Give several methods for controlling confounding variables.

10. Regarding experimental design, briefly give the essential definitions of: an empirical study, a systematic review, a controlled randomized trial, an observational study, theoretical paper, a single-case experimental study, and a case study.

11. Regarding experimental design, distinguish "statistical significance" and "practical significance".

12. Distinguish controlled-vocabulary searches from natural language searches.

13. Distinguish citation data from citation meta-data.

14. Construct a reasonable boolean search query for a topic in your field of interest.

15. Name three academic search engines, and briefly describe your experience, if any, with each.

16. Name two citation managers, and briefly describe your experience, if any, with each.

17. What is the purpose of the introduction to a research proposal or report? What should be included?

19. Discuss these research designs:

One shot:			X	O_1
Pre/post test:		O_1	X	O_2
Randomized controlled trial:	R	O_1	X	O_2
	R	O_3	X	O_4

20. Distinguish “internal validity” from “external validity.” For each, describe a few threats to claims of validity.

21. Distinguish “sampling” from “assignment” in an experiment. Draw a diagram showing how these fit into a general randomized controlled trial.