1. In order to determine if living next to high-voltage power lines increases your chance of getting cancer, researchers selected several homes at random, determined if they were within 50 yards of a high-voltage power line, and recorded if anyone in the home had cancer. They compared the proportion of cancer. They compared the proportion of cancer cases in homes within 50 yards of a high-voltage power line to the proportion in homes more than 50 yards from a high-voltage power line. This is

- A. an observational study.
- B. an experiment, but not a double-blind experiment.
- C. a matched pairs experiment.

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2. For one kindergarten class in his district, a researcher determines which children already can read simple words and which children cannot upon entering kindergarten. The children are followed until third grade, at which point they are tested to determine the grade level at which they are reading. Those children who were reading simple words upon entering kindergarten are found to be reading at a higher level than those who could not read simple words upon entering kindergarten. Some educators are skeptical, as they argue that those students with higher innate reading abilities were probably those reading simple words upon entering kindergarten, thus it is not surprising that they are reading at a higher level in third grade. The response variable in this study is

- A. whether or not the children could read simple words upon entering kindergarten.
- B. the innate reading ability of the children.
- C. the grade level at which they are reading in third grade.

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3. In a recent study, a random sample of children in grades two through four showed a significant negative relationship between the amount of homework assigned and student attitudes. The amount of homework assigned is

- A. a response variable.
- B. an explanatory variable.
- C. a lurking variable.

4. Eight subjects who suffer from chronic fatigue syndrome volunteer to take part in an experiment to see if shark fin extract will increase their energy level. Half of the volunteers are to be given shark fin extract twice a day and the other half a placebo twice a day. The names of the subjects are given below, and each name is given a numerical label.

MEN

1. Adams	5. Lewis
2. Covell	6. Norton
3. Gregg	7. Simpson
4. Howard	8. Taylor

Use the following list of random digits to assign four subjects to the shark fin treatment. Read the table from left to right, and use the numerical labels given above to the names.
15917 50495 11384 44982 20751 27498 12069 45287 71753 90236 66419 84533

The people assigned to the shark fin treatment are

- A. 1, 5, 9, and 1.
- B. Adams, Lewis, and Simpson. We must give Adams a double dose because he is selected twice.
- C. Adams, Lewis, Simpson, and Howard.

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5. One hundred volunteers who suffer from depression are available for a study involving a new drug that is thought to be effective in treating depression. The researchers want to compare the new drug to the drug currently in use. It is believed that men and women may respond differently to the drugs. Fifty of the volunteers are selected at random and are given the new drug, and the other fifty are given the drug currently in use. A psychiatrist evaluates the symptoms of all volunteers after four weeks in order to determine if there had been substantial improvement in the severity of the depression. Which of the following is correct?

- A. This is an example of a completely randomized design.
- B. This is an example of a block design.
- C. Both (a) and (b) are correct.

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6. In an experiment to determine if a new type of fertilizer is better than the current "standard" fertilizer for growing corn, twenty plots of land are randomly assigned one of the two types. At the end of the growing season, the corn yields for each plot are measured. It was found that plots which were located closer to a highway had smaller yields than other plots. In this experiment, distance from the highway is a

- A. lurking variable.
- B. response variable.
- C. factor.