For questions 1-3, suppose that I want to investigate whether the color of paper on which an exam is printed has an effect on students’ exam scores. For the next exam in our class, I print half of the exams on green paper and the other half on yellow paper. I mix up the exams before distributing them to students.

1. Identify the explanatory variable in this study, and classify it as categorical or quantitative.

2. Identify the response variable in this study, and classify it as categorical or quantitative.

3. Is this an observational study or an experiment?

For questions 4-5, consider a study published in a 2007 issue of the journal *Preventive Medicine*, in which researchers found that smokers were more likely to have used candy cigarettes as children than non-smokers were.

4. Is this an observational study or an experiment? Explain briefly.

5. When hearing about this study, John responded: “But isn’t the smoking status of the person’s parents a confounding variable here?” When Karen asked what he meant, John said: “Children whose parents smoke are more likely to become smokers themselves when they become adults.” What else does John need to say in order to explain how the parents’ smoking status can be a confounding variable in this study?