Categorize each of the following research questions as "good" or "bad", and provide alternative formulations for the bad ones. Save your responses in a document of some kind, submit a link below, and discuss your reasoning with your mentor.

1. **What is the 1994 rate of juvenile delinquency in the U.S.**

Better stated: In 1994, what % of U.S. juveniles age 13-17 committed a crime that was recorded by law enforcement.

1. **What can we do to reduce juvenile delinquency in the U.S.?**

Better stated: Many states handle juvenile delinquency in different ways. Determine which method is most effective at preventing repeat delinquency.

1. **Does education play a role in reducing juvenile delinquents' return to crime?**

The term "education" is too broad. Does it mean attending school regularly without absences? Getting good grades? Better Phrasing: Does enrolling a juvenile in a teacher-student mentorship program reduce a juvenile delinquent's return to crime?

1. **How many customers does AT&T currently serve in Washington, DC?**

Good.

1. **What factors lead consumers to choose AT&T over other service providers?**

This question is best answered via surveying AT&T customers after their purchase decision.

Without survey data, the best we can do is look at features that competitors don't have and determine how much they are used by AT&T customers. "The competitors do not have feature X, Y, Z. How much are these features used by AT&T customers?"

We cannot measure competitor service quality because that data is not available.

1. **How can AT&T attract more customers?**

Bad question. It's obvious that lower prices, better quality, and more availability will bring in more customers. Better to ask a specific question that measures the ROI of a marketing program: Is it worth it to offer the following promotion: a free phone in exchange for signing up for a 2 year contract? Or perform a study to look at all past promotions and identify which provided the best lift in sales volume.

1. **Why did the Challenger Shuttle explode?**

We can analyze this if the data is available from both the Challenger and a control group of other launches. That includes external variables such as climate and internal variables from black box recorders.

1. **Which genes are associated with increased risk of breast cancer?**

Good question. We need the ability to identify genes in breast cancer patients and compare with control group of individuals in the same age group who never had breast cancer.

1. **Is it better to read to children at night or in the morning?**

Poor question. We don't know what outcome we are trying to predict. Can be rephrased: Are children more attentive to stories when read to at night or in the morning? Survey data would need to be collected by parents.

1. **How does Google’s search algorithm work?**

Poor question. Google's algorithm is proprietary and we do not have the data to answer this. Even if we asked "what attributes contribute to a websites' higher search ranking?", we would be limited to data that can be collected ourselves from reviewing the website. Google proprietary information such as how many other sites link to that site would not be accessible.