MATH 1000 READING CHECK 4

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Name:

These questions concern Chapter 3 of *How Not to Be Wrong* by Jordan Ellenberg, titled "Everyone is Obese".

(1) What is the statistical technique that Jordan says "is to social science as the screwdriver is to home repair?"

   a) data interpolation
   b) quadratic modeling
   c) linear regression

(2) What trend is used to illustrate the technique from Question 1?

   a) Amongst private colleges in North Carolina, schools with higher tuition tend to have higher average SAT scores for their incoming students.
   b) Amongst high schools in Dallas-Fort Worth suburbs, schools in wealthier neighborhoods tend to have a higher percentage of students that have smartphones.
   c) Amongst NBA players since 1976, taller players tend to shoot lower percentages from the free throw line.

(3) What does the Mark Twain passage quoted in this chapter humorously suggest one could conclude by extrapolating an observed trend?

   a) The Mississippi River used to be over a million miles long.
   b) Mt. Everest used to be over 100,000 feet high.
   c) The Great Lakes used to cover the entire North American continent.

(4) What does Jordan want his students to be able to do, as opposed to just being a "slow, buggy version of Microsoft Excel"?

    a) Spot, and correct, even very small and subtle errors in algebra and arithmetic.
    b) Understand how each of the specific methods they learn can be applied in their everyday lives.
    c) Not just apply methods mechanically, but decide whether the result makes sense, and whether the method was the right one to use in the first place.

(5) What is used as an analogy for trying to reason mathematically without having some baseline internalized knowledge, like knowing 6×8?

    a) Trying to play the guitar with a broken string.
    b) Trying to write a sonnet when you have to look up the spelling of every word.
    c) Trying to listen to classical music backwards through static.

(6) Which mathematical pedagogy camp does Jordan identify himself with?

    a) Traditional
    b) Reform
    c) Neither

(7) Which is a fundamental flaw with using a straight line model to claim that all Americans will be overweight in 2048?

    a) A proportion cannot increase linearly, because it can never go above 100%, whereas lines keep going up.
    b) The same modeling technique says that it will take until 2095 for all black men to be overweight, which is absurd if ALL people will be overweight by 2048.
    c) Even though all smooth curves look like lines close up, it is naiive to use a straight line to approximate something that is potentially nonlinear over a large time interval.
    d) All of the above.