



It's that *special* month of the year - **March!!** It's full of St. Patrick's day, National Dig Day, Pi Day, Dr. Seuss and Barbie's birthdays, but most of all **MARCH MADNESS**. For college basketball this is the time that the best 68 teams get a chance to contend for the national title through a huge one-elimination tournament. Throughout this project we will be following the games played in the tournament, the teams involved and the math and statistics that are also so prevalent. There will be a prize for the person(s) that guesses the most teams correctly! (Scoring will be decided by the class)

Sunday 6 PM ASSIGNMENT #1A - **Watch** the selection show on Sunday on CBS! Through the coming weeks, we will be filling in brackets, choosing the teams you think will advance in each game until the final round. You will be able to keep track of the teams that advance and you correctly guessed each day.

ASSIGNMENT #1B - **Create** a method for scoring correct guesses on a bracket. If the class were to compete in a game where each person guesses who will advance to each subsequent round and finally choose the winner of the tournament, how would you assign points to this game? (i.e. one point per correct guess, 1 point for each correct in the first round then 2 in the second round, etc., 5 points for each in the first then 3 in the second, 100 points for the winner of the tournament...) Be creative, practical and thoughtful with this! On the page titled, "**Playing the Game**", write up a paragraph or two describing your scoring system, an illustration or diagram may also be handy. You will then present your system to the class and we will decide which system we will use to actually play the game!

Homework Answers:

1. A 2. D ~~3. A~~ 4. B ~~5. C~~

6. Standardized test scores.

- a) No, this is not an experiment. There are no imposed treatments. This is a retrospective observational study.
- b) We cannot conclude that the differences in score are caused by differences in parental income. There may be lurking variables that are associated with both SAT score and parental income.

7. Heart attacks and height.

- a) No, this is not an experiment. There are no imposed treatments. This is a retrospective observational study.
- b) We cannot conclude that shorter men are at higher risk of heart attack. There may be lurking variables that are associated with both height and risk of heart attack.

8. MS and vitamin D.

- a) This is a retrospective observational study.
- b) This is an appropriate choice, since MS is a relatively rare disease.
- c) The subjects were U.S. military personnel, some of whom had developed MS.
- d) The variables were the vitamin D blood levels and whether or not the subject developed MS.

9. Super Bowl commercials.

- a) This is a stratified sample. The question was about population values, namely the proportions of men and women who look forward to more commercials. No treatment was applied, so this is not an experiment.
- b) Yes, the design was appropriate.

10. Menopause.

- a) This was a randomized, comparative, placebo-controlled experiment.
- b) The subjects were 351 women, aged 45 to 55 who reported at least two hot flashes a day.
- c) The treatments were black cohosh, a multi-herb supplement with black cohosh, a multi-herb supplement plus advice to consume more soy foods, estrogen, and a placebo. The response was the women's self-reported symptoms, presumably the frequency of hot flashes.
- d) The difference was larger than we'd expect just by random chance.