

# *SOC 4930/5050: Lecture Prep 04 - What are the Chances?*

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## *Directions*

*Complete all of the following questions, providing written answers and work where necessary. A replication video will be posted on YouTube. A scanned copy of this assignment should be uploaded to your Assignments Repository by 4:15PM on Monday, September 17<sup>th</sup>, 2018.*

## *Exercise Set A*

Please complete Questions 1 through 5 on pages 225 and 226 of *Statistics* by Freedman et al. (2007):

1. A computer is programmed to compute various chances. Match the numerical answers with the verbal descriptions (which may be used more than once):

### *Numerical answer*

- (a) -50%
- (b) 0%
- (c) 10%
- (d) 50%
- (e) 90%
- (f) 100%
- (g) 200%

### *Verbal description*

- (a) This is as likely to happen as not.
- (b) This is very likely to happen, but it's not certain.
- (c) This won't happen.
- (d) This may happen, but it's not likely.
- (e) This will happen, for sure.
- (f) There's a bug in the program.

2. A coin will be tossed a thousand times. About how many heads are expected?
3. A die will be rolled a thousand times. About how many aces (a 1) are expected?

4. In five-card draw poker, the chance of being dealt a full house (one pair and three of a kind) is 0.14 of 1%. If 10,000 hands are dealt, how many will be a full house?
5. One hundred tickets will be drawn at random with replacement from one of the two boxes shown below. One each draw, you will be paid the amount shown on the ticket, in dollars. Which box is better and why?

