

Homework for Dr. Z.'s MathHistory for Lecture 2

0. Read and understand Chapter II, sections 4-5 (pp. 23-31) summarize its content in your own words and your own handwriting, and write it in your HISTORY notebook, [You should have at least the equivalent of two typed pages, but you welcome to write more]

The other problems should be either hand-written or typed and sent as .pdf file or .txt file (PLEASE no other formats) to DrZlinear@gmail.com by 8:00pm Sunday, Sept. 19, 2021 ,

Subject: hw2

with an attachment: hw2FirstLast.pdf (or hw2FirstLast.txt)

Also in the BODY of the homework, have your name and indicate whether it is OK to post the homework in my web-site.

1. Recall that an $n \times n$ magic square contains all the integers from 1 to n^2 such that each row and each column add-up to the same amount. What is that amount? Prove it!

2. Construct, without peeking, a 3×3 magic square.

3. Construct, without peeking, a 4×4 magic square.

4. Construct, without peeking, a 7×7 magic square.

5. Consider the following gambling game. Person A has a deck of four cards labeled 1, 3, 5, 7 and player B has a deck of cards labeled 2, 4, 6. The croupier shuffles each deck (face down) really well, and then looks at the top cards. Assuming that each outcome is equally likely, whoever got the higher card wins the round. Who is more likely to win? what is the probability of winning?

6. Construct a 3×3 Magic square, and make out of them 3 decks of cards, with labels (denominations) given by the three rows, call them deck A, deck B, deck C.

In the game A vs. B who is more likely to win?

In the game B vs. C who is more likely to win?

In the game A vs. C who is more likely to win?

Does it constitute a *sucker's paradox*? Explain!

Note: that was also the attendance question, but please do it again.