

Combinatorial Gardner

Winter 2013 Reading Assignments

January 14, 2013

Reading assignments are mainly taken from *Martin Gardner's Mathematical Games*, (CD-ROM).

1. *Martin Gardner's 6th Book of Mathematical Diversions from Scientific American*, Chapter 3 (Combinatorial Theory) and Chapter 10 (Graph Theory) and *Interview and Copyright*, and Martin Gardner's obituary in The New York Times, available on-line at <http://www.nytimes.com/2010/05/24/us/24gardner.html>
2. *The Last Recreations: Hydras, Eggs and Other Mathematical Mystifications*, Chapter 11 (The Power of the Pigeonhole) and *Penrose Tiles to Trapdoor Ciphers ... And The Return of Dr. Matrix*, Chapter 17 (Ramsey Theory)
3. *Mathematical Magic Show*, Chapter 4 (Factorial Oddities) and *Mathematical Carnival*, Chapter 15 (Pascal's Triangle), and *Time Travel and Other Mathematical Bewilderments*, Chapter 20 (Catalan Numbers)
4. *Hexaflexagons and Other Mathematical Diversions*, Chapter 15 (Nim and Tac Tix), and *Wheels, Life and Other Mathematical Amusements*, Chapter 14 (Nim and Hackenbush), and *Penrose Tiles to Trapdoor Ciphers ... And The Return of Dr. Matrix*, Chapter 8 (Wythoff's Nim)
5. *Mathematical Circus*, Chapter 13 (Fibonacci and Lucas Numbers), and *The Second Scientific Book of Mathematical Puzzles and Diversions*, Chapter 8 (Golden Ratio Phi)
6. *Fractal Music, Hypercards and More ...*, Chapter 15 (Mathematical Chess Problems), and *The Unexpected Hanging and Other Mathematical Diversions*, Chapter 16 (The Eight Queens and Other Chessboard Diversions), and *Penrose Tiles to Trapdoor Ciphers ... And The Return of Dr. Matrix*, Chapter 5 (Back from the Klondike and Other Problems) and *The Unexpected Hanging and Other Mathematical Diversions*, Chapter 7, Problem 6 (Eight Problems – Two Chess Problems: Minimum and Maximum Attacks)

7. A. Cooper, O. Pirkhurko, J. Schmitt, G. Warrington *Martin Gardner's minimum no-three-in-a-line problem*, American Mathematical Monthly, to appear. (Available from my webpage.) and Martin Gardner, Papers 1957-1968 (Box 40, Folder 4) - focus on correspondence. *Queens on chessboards*, notes by G. Warrington. (I need to supply you three files.)

BEYOND THIS IS TENTATIVE

8. *New Mathematical Diversions*, Chapter 20 (Calculus of Finite Differences)
9. *The Last Recreations: Hydras, Eggs and Other Mathematical Mystifications*, Chapter 8 (Dinner Guests, Schoolgirls and Handcuffed Prisoners), and *New Mathematical Diversions*, Chapter 14 (Euler's Spoilers: Discovery of Order-10 Graeco Latin Square)
10. *Wheels, Life and Other Mathematical Amusements*, Chapter 15 (Golomb's Graceful Graphs)
11. *The Unexpected Hanging and Other Mathematical Diversions*, Chapter 20 (37 Catch Questions), and *Hexaflexagons and Other Mathematical Diversions*, Chapter 8 (Game of Hex), and *New Mathematical Diversions*, Chapter 6 (Board Games)
12. *The Second Scientific Book of Mathematical Puzzles and Diversions*, Chapter 12 (Magic Squares), and *Mathematical Carnival*, Chapter 5 (Magic Stars), and *Time Travel and Other Mathematical Bewilderments*, Chapter 17 (Magic Squares and Cubes)
13. *Hexaflexagons and Other Mathematical Diversions*, Chapter 6 (Tower of Hanoi) and *The Last Recreations: Hydras, Eggs and Other Mathematical Mystifications*, Chapter 7 (Directed Graphs and Cannibals)