Appendix D

List of materials for course packet

This is the list of reading materials for fall 1996. Copy Corner at 1710 George Bush Drive (409 693–0640) arranged copyright permissions and bound the materials into a packet priced at $30.27 plus tax.

1. René Descartes, *Discourse on the Method of Rightly Conducting the Reason, and Seeking Truth in the Sciences*, excerpt from Part II. A public-domain source is `gopher://wiretap.spies.com/00/Library/Classic/reason.txt`.

2. René Descartes, *Philosophical Essays*, translated by Laurence J. Lafleur, Bobbs-Merrill Company, Indianapolis, 1964, pages 156–162.

3. Excerpt from *Alice in Puzzleland* by Raymond M. Smullyan, Penguin, 1984, pages 20–29.

4. Proofs without words from *Mathematics Magazine* **69** (1996), no. 1, 62–63.

5. Stephen B. Maurer, The recursive paradigm: suppose we already knew, *School Science and Mathematics* **95** (1995), no. 2 (February), 91–96.

6. Chapter VII, pages 223–264, of *Mathematics and the Imagination* by Edward Kasner and James Newman, New York, Simon and Schuster, 1940. This reading is an introduction to probability.

7. "The Bottle Imp" by Robert Louis Stevenson, from *Island Nights' Entertainments*. A public-domain source is `http://www.inform.umd.edu:8080/EdRes/ReadingRoom/Fiction/IslandNights/bottle-imp`. This fits with the surprise examination paradox.

8. Richard J. Trudeau, *Dots and Lines*, Kent State University Press, 1976, pages ix–27. This introduces the notion of a graph and gives some examples.

9. William Dunham, *The Mathematical Universe*, Wiley, New York, 1994, pages 51–63. This is a biographical piece about Euler.

10. James R. Newman, *The World of Mathematics*, Volume One, Simon and Schuster, New York, 1956, pages 570–580. This is a commentary on and a translation of Euler's original paper on the seven bridges of Königsberg.

11. Sir Edmund Whittaker, "William Rowan Hamilton," *Scientific American*, May 1954, reprinted in *Mathematics in the Modern World*, Freeman, San Francisco, 1968, pages 49–52.

12. Alan Tucker, The parallel climbers puzzle, *Math Horizons*, Mathematical Association of America, November 1995, pages 22–24.

13. Frank Harary, *Graph Theory*, Addison-Wesley, 1969, chapter 1, pages 1–7.

14. Richard J. Trudeau, *Dots and Lines*, Kent State University Press, 1976, chapter 4, pages 97–116.

15. *The Traveling Salesman Problem*, edited by E. L. Lawler, J. K. Lenstra, A. H. G. Rinnooy Kan, and D. B. Shmoys, Wiley, New York, 1985, pages 1–15. This is a historical piece by A. J. Hoffman and P. Wolfe on the traveling salesman problem.

16. Norman L. Biggs, E. Keith Lloyd, and Robin J. Wilson, *Graph Theory 1736–1936*, Oxford University Press, 1976, chapter 6, pages 90–108. This is a historical piece including Kempe's famous false proof of the four-color theorem and Heawood's correction.

17. Möbius shorts, *Mathematics Magazine* **68** (1995), no. 2, 127.

18. Ian Richards, "Number Theory," in *Mathematics Today: Twelve Informal Essays*, pages 37–63, edited by Lynn Arthur Steen, Springer-Verlag, 1978.

19. Ivars Peterson, "A Shortage of Small Numbers," in *Islands of Truth: A Mathematical Mystery Cruise*, pages 152–161, Freeman, 1990.

20. Victor Klee and Stan Wagon, *Old and New Unsolved Problems in Plane Geometry and Number Theory*, Dolciani Mathematical Expositions, No. 11, Mathematical Association of America, 1991, pages 173–181 and 203–214.

21. Robert Gray, Georg Cantor and transcendental numbers, *American Mathematical Monthly* **101** (1994), no. 9, 819–832.

22. David M. Bloom, A one-sentence proof that $\sqrt{2}$ is irrational, *Mathematics Magazine* **68** (1995), no. 4, 286.

23. Vincent P. Schielack, Jr., Math Bite: A quick counting proof of the irrationality of $\sqrt[n]{k}$, *Mathematics Magazine* **68** (1995), no. 5, 386.

24. Ivan Niven, A simple proof that π is irrational, *Bulletin AMS* **53** (1947), 509.

25. Excerpts from Ivan Niven, *Irrational Numbers*, Mathematical Association of America, 1967, pages 16–27, 117–118, and 131–133.

26. Excerpt on Fermat theorems, in *A source book in mathematics, 1200-1800*, edited by Dirk Jan Struik, Harvard University Press, 1969, 1987, reprinted by Princeton University Press, pages 26–29.

27. Kenneth H. Rosen, *Elementary Number Theory and Its Applications*, third edition, Addison-Wesley, 1992, pages 166–170 (the perpetual calendar) and 234–244 (ciphers).

28. "A Method for Obtaining Digital Signatures and Public-Key Cryptosystems," by R. L. Rivest, A. Shamir, and L. Adleman, *Communications of the ACM* **21** (1978), 120–126. Available on Rivest's home page at `http://theory.lcs.mit.edu/~rivest/publications.html` both as LaTeX source and as PostScript.

29. Joseph Gallian, Math on money, *Math Horizons*, Mathematical Association of America, November 1995, pages 10–11.

30. Daniel Pedoe, *The Gentle Art of Mathematics*, Macmillan, 1959 (Collier, 1963; Dover, 1973), pages 18–21 (excerpt on Nim).

31. Part I, pages 3–61, of *Game Theory and Strategy* by Philip D. Straffin, MAA, 1993.

32. John G. Kemeny and J. Laurie Snell, Game-theoretic solution of baccarat, *American Mathematical Monthly* **64** (1957), 465–469.