

## Hints for Distribution Later

2. Exercise 6.1, p. 189.
4. The 8-puzzle is referenced in your text's index under "e" for "eight-puzzle."
6. Exercise 3.9, p. 90.
8. p. 133 allusion, but a misleading one, since it appears to say that the rule will always work.
10. p. 725 discusses unsupervised clustering as a learning technique. p. 845 distinguishes between agglomerative clustering and k-mean clustering.
11. p. 359.
12. The game is called "two finger Morra." See p. 632, including the footnote there, and Exercise 17.11 on p. 648.
  
13. This is an example of a "linear programming" problem. The word programming has nothing to do with computers. It's a method of finding maxima and minima that doesn't use Calculus. This particular problem was taken from [www.wiley.com/college/sc/sullivan/CH03.pdf](http://www.wiley.com/college/sc/sullivan/CH03.pdf) Your text mentions linear programming on p. 638 as a way of solving problems like Question 12 above. It's "non-linear programming" if at least one of the inequalities is non-linear. This can still be solved by graphical means if the problem is two-dimensional. Sometimes an approximation method must be used, and sometimes not. See if you can find a practical two-dimensional non-linear programming problem on the internet, and be prepared to share it with the class.
  
14. Excel "hill climbing" as a means of goal-seeking: See hill climbing on pp. 110–114.
  
15. The monkey and banana problem is a famous one in AI. It's Exercise 11.4 on p. 412. There the "planner language" STRIPS is mentioned, which historically was an early planning language. Now an extension of it, called Problem Domain Description Language, or PDDL, is used to describe such planning environments. Check out PDDL on the web and be prepared to describe it to the class. Chuck Craig, my work-study, is working on preparing to have you try Fast-Forward, an engine for PDDL: [www.mpi-sb.mpg.de/~hoffmann/ff.html](http://www.mpi-sb.mpg.de/~hoffmann/ff.html) If that doesn't prove to be suitable for our course, I'll fall back on SOAR, another simpler planner language: [sitemaker.umich.edu/soar/soar\\_software\\_downloads](http://sitemaker.umich.edu/soar/soar_software_downloads)
  
19. This kind of scheduling is called critical path analysis (CPA). Now that you know what it's called, see if you can find out more about CPA. Page 418 of your text gives some information.
  
24. p. 945 Exercise 25.8 is where this game is found.

Attachments expected: (1) Sudoku, Sample signed digraph figures, Impossible figure, (2) {HumanDriver, HumanPsychology}.java. (3) Critical Path Analysis foldout.

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## Endnotes

1. A. R. Luria is a Soviet neuroscientist. No one seems to know whether he is in fact the author of this sentiment, but Andy Clark remembers Luria as the source. See his *Being There: Putting Brain, Body, and World Together* (Cambridge, MA: Bradford Book, MIT Press, 1998), p. 175 n.44.