

# TANGRAMS

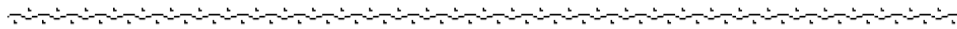
Prepared by Ranjit Mathew ([rmathew@hotmail.com](mailto:rmathew@hotmail.com)).

History, Making, Rules and some Puzzles from Randy's Tangrams (<http://www.tangrams.ca/>).

Some More Puzzles from Susan's "Worthog Tangrams"  
(<http://www.worthogarden.com/tangram/Tangrams.html>).

"Paradoxical" Puzzles from "El Tangram" (<http://www.uv.es/~buso/tangram/tangram.html>).

(NOTE: Solutions to the puzzles included here can be found on the sites listed above.)



## History

The invention of the Tangram puzzle is unrecorded in history. The earliest known Chinese book is dated 1813 but the puzzle was very old by then. One reason for this could be that in China, its country of origin, at the time it was considered a game for women and children. This would have made it unworthy of "serious" study and unlikely to be written about. Different times, different ways of thinking. Glad that's changing. ☺

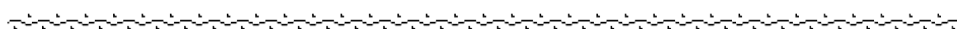
The roots of the word Tangram are also shrouded in time, with a number of possible explanations. The one I like best involves the Tanka people. These river people of China were great traders who were involved in the opium trade. The western sailors they traded opium to likely played with the puzzle when they visited their Tanka girlfriends. The story I believe is that it comes from the obsolete English word "tramgram" meaning puzzle or trinket.

Tangrams enjoyed a surge of interest during the 19th century in Europe and America. This, no doubt, was due to the opening up of trade with China and the aforementioned sailors bringing home new found amusements. "The Chinese Puzzle" spawned a flood of books and picture card sets. Some quite elaborate Chinese examples exist with pieces carved from and/or inlaid with ivory, jade and other fine materials. Others were cheap, locally made copies in wood or fired clay. Some books blindly reproduced previous mistakes in the patterns. Some things never change.

In 1903, Sam Loyd wrote his great spoof of Tangram history, *The Eighth Book Of Tan*. He had many people convinced that the game was invented 4000 years ago by the god Tan. According to Loyd, the first 7 *Books Of Tan* were linked with many famous people and historical events. All very convincing and it made Sam a lot of money. Later examination showed it to be a colossal joke. The book did catalog over 600 patterns, many by Loyd himself. He also introduced (along with H. F. Dudeney) the idea of paradoxes

Fu Tsiang Wang and Chuan-chin Hsiung mathematically proved in 1942 the existence of a finite set of patterns referred to as "convex." In this context, it means that there are no indentations along the outside edge. There are only 13 silhouettes that qualify. Other finite sets may exist.

Tangrams continue to entertain and frustrate these days. The puzzle attracts people on a number of levels. It gets the math inclined with the geometry and ratios of the pieces. The figures spark visually inclined people though their form, liveliness and striking simplicity. It is one of the classic puzzles, appealing to young and old, the serious and the carefree.

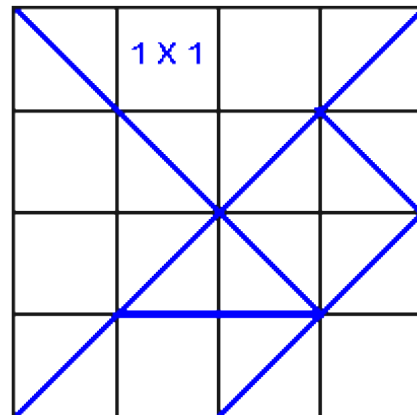
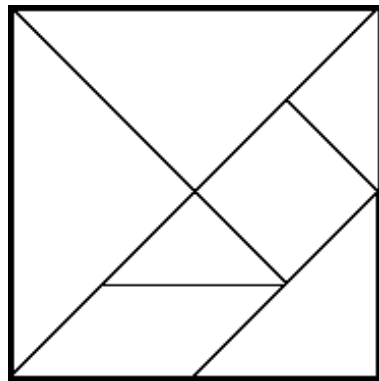
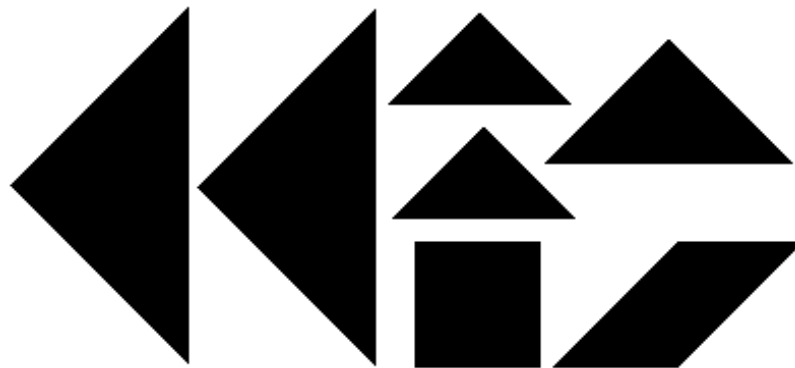


# Making The Pieces

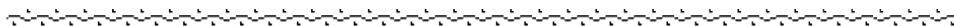
You can use any material you want to make your Tangram set, the only requirement being that you can cut or form it into shape. I've seen them made of paper, cardboard, wood, ceramics, glass and metal. Some beautiful examples from China were made of ivory with inlaid and carved ornamentation on the pieces and box.

Whatever you choose to use, you will need a four inch (aprox. twelve cm.) square of it, usually about one eighth of an inch (two mm.) thick for a puzzle this size. You can scale this up or down, the four squares part is the important thing here.

Draw a one inch (three cm.) grid on the material for a puzzle the size I like to play with. You then mark off the blue lines as shown below. Cut your material carefully along these blue lines. This will produce the seven tan pieces; five triangles, one square and one rhomboid.



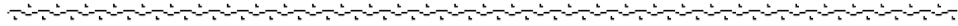
Smooth the pieces and apply your choice of finish. I prefer black tans, but hey, it's your set, use what you like or none at all. 😊



## The Rules

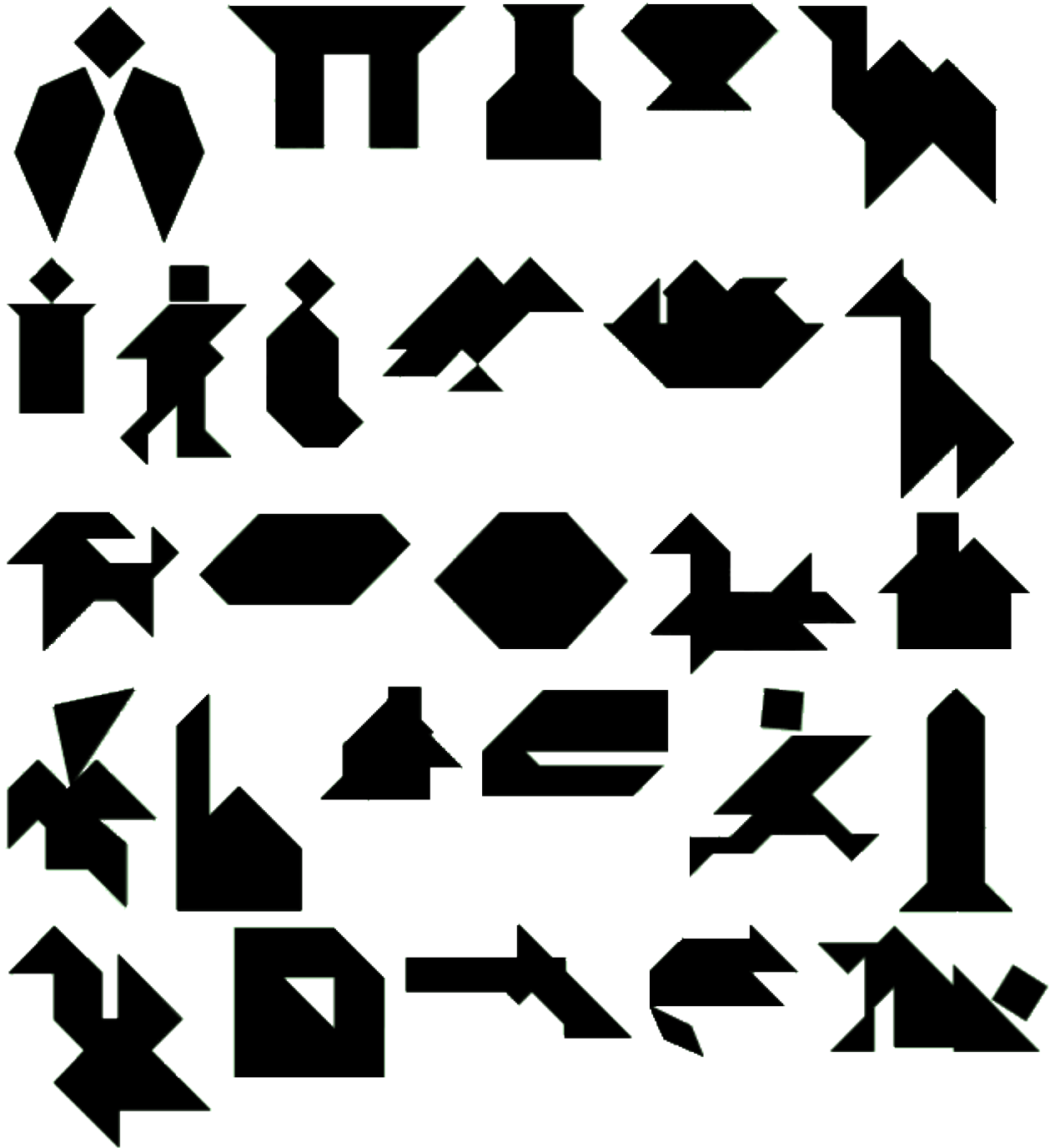
Simple really, which is another of its attractions. The classic rules are as follows: You must use all seven tans,

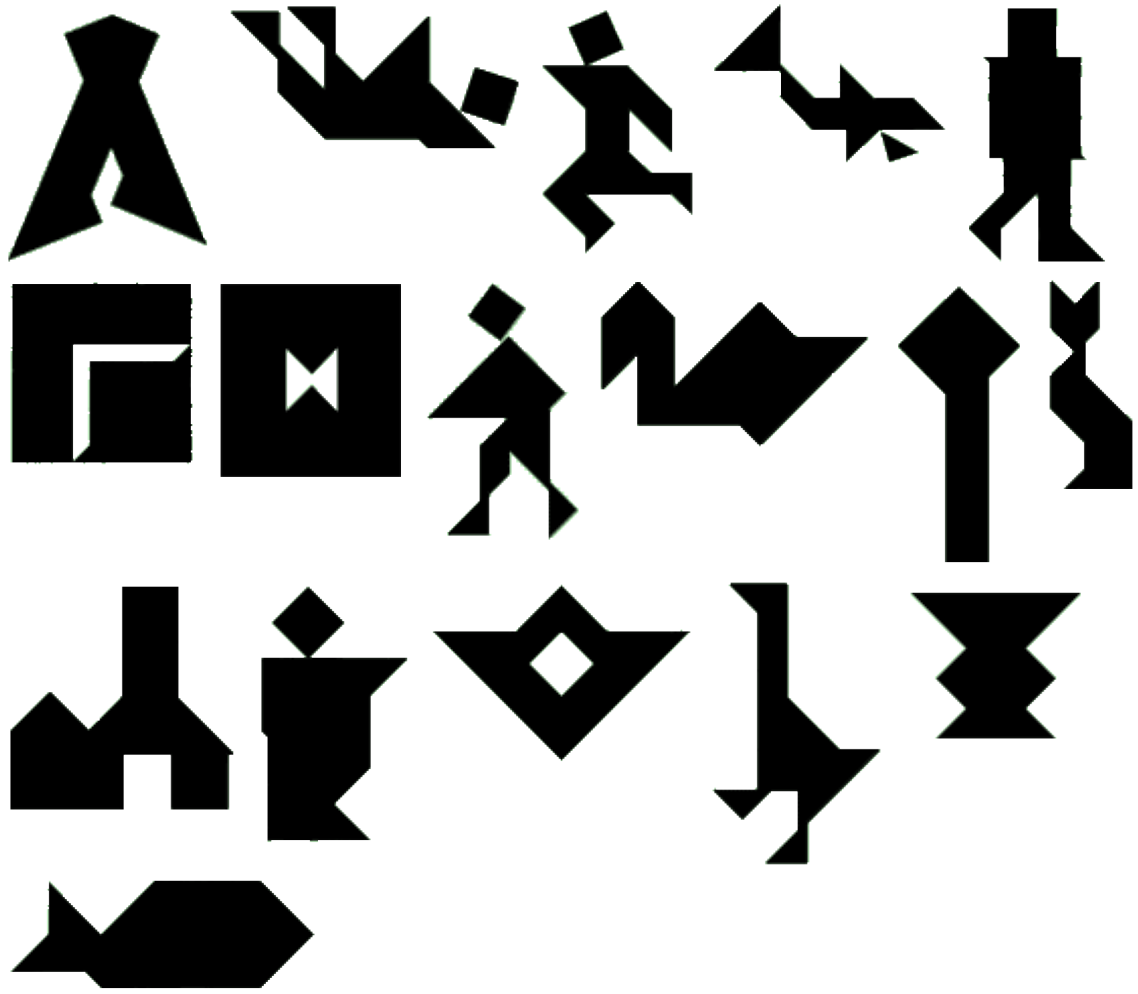
they must lay flat, they must touch and none may overlap. Feel free to break away from the "rules", though. Enjoy!



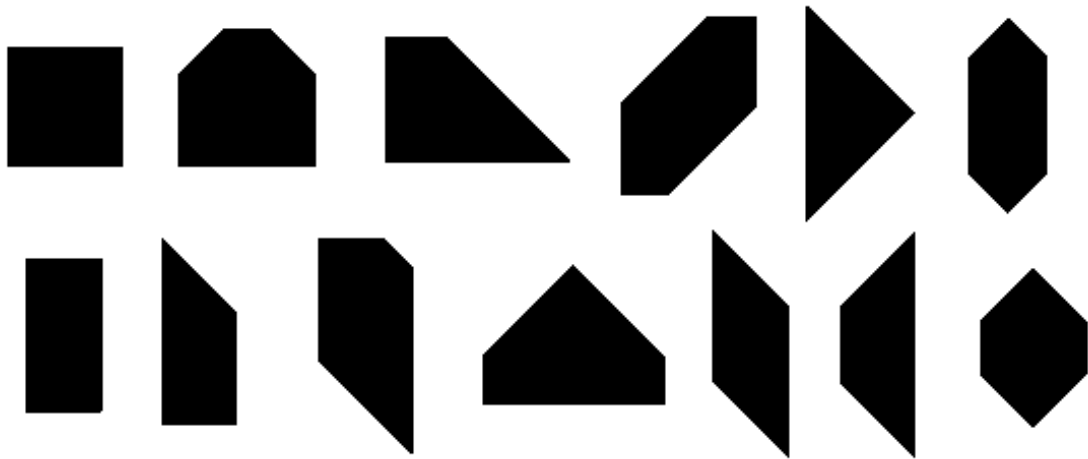
## Some Puzzles

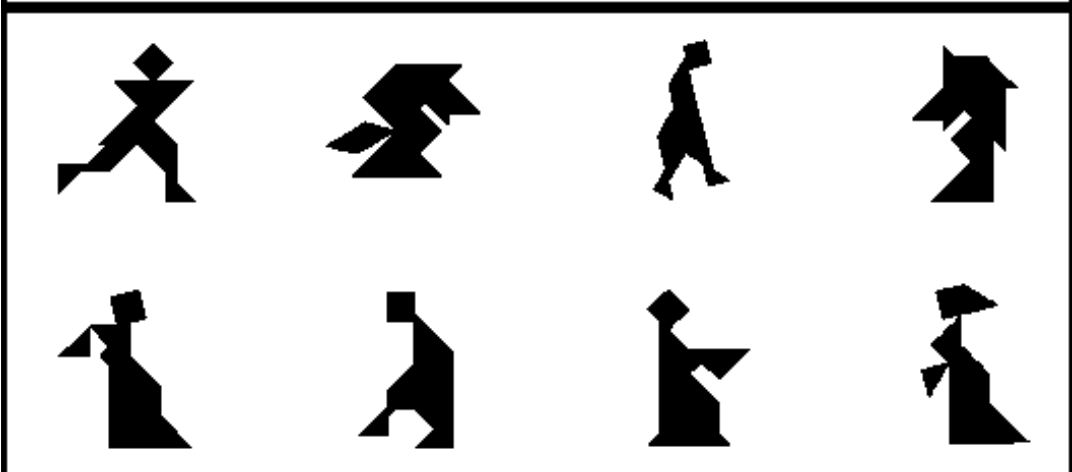
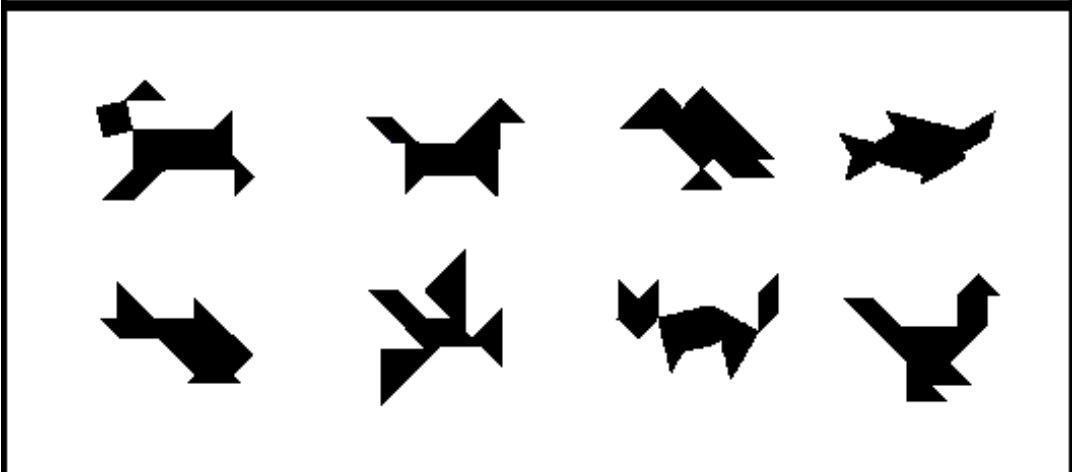
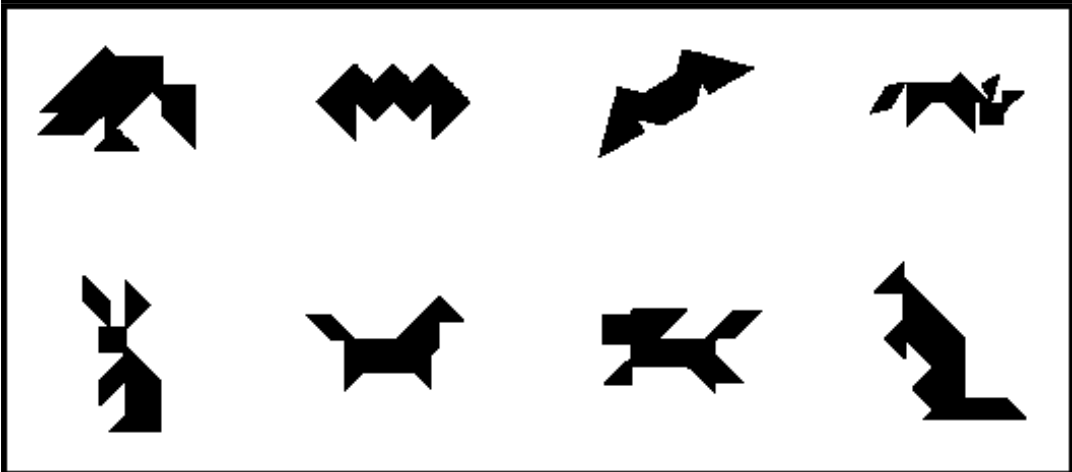
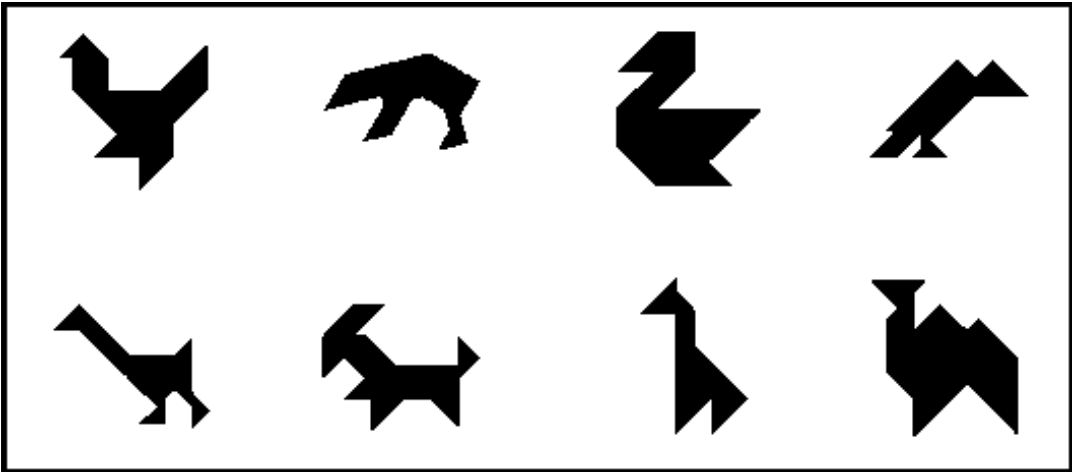
(Puzzles from [Susan's "Worthog Tangrams"](#).)

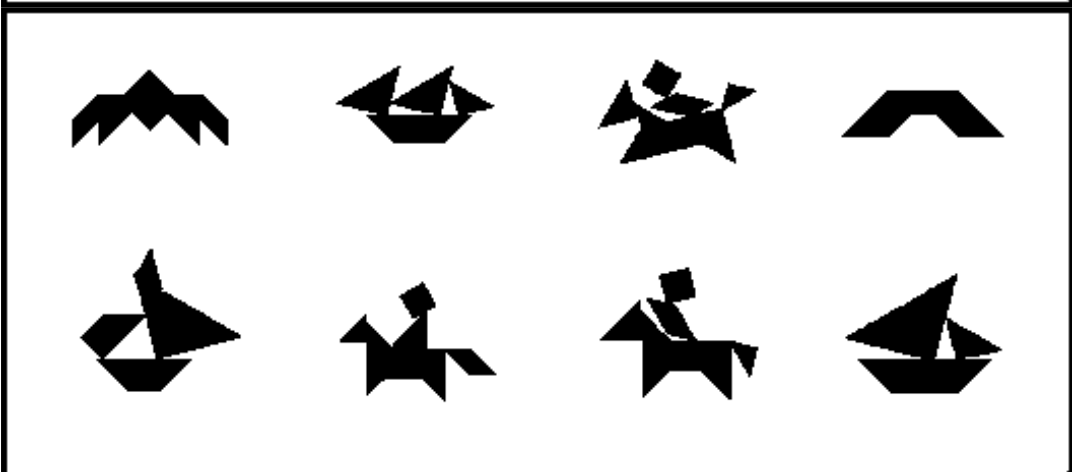
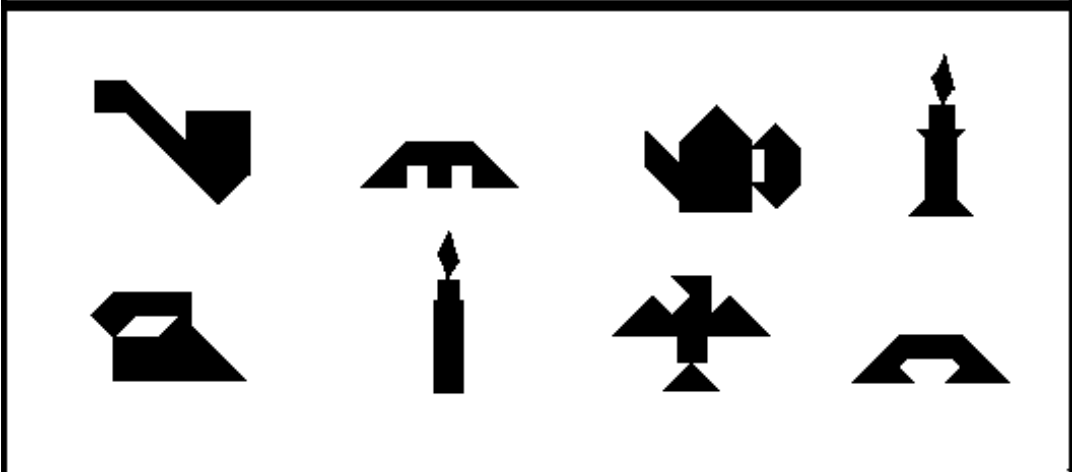
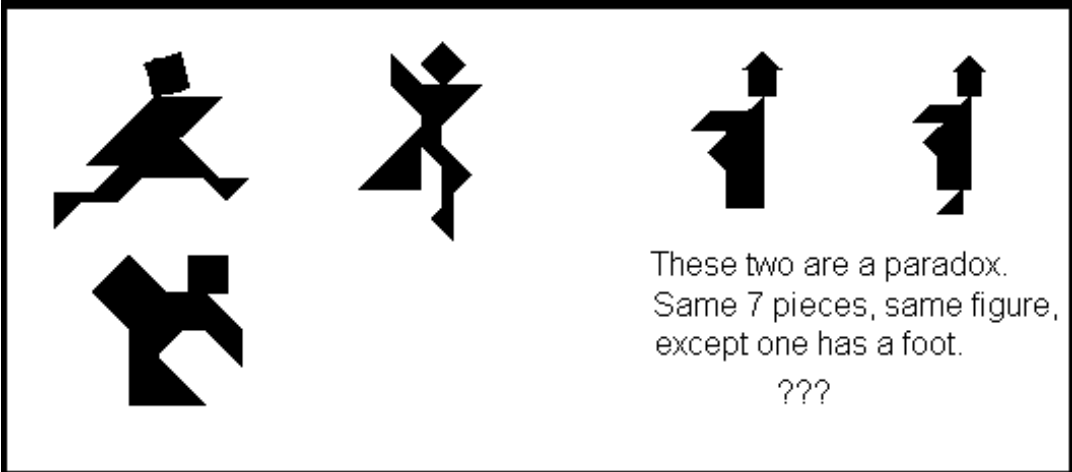
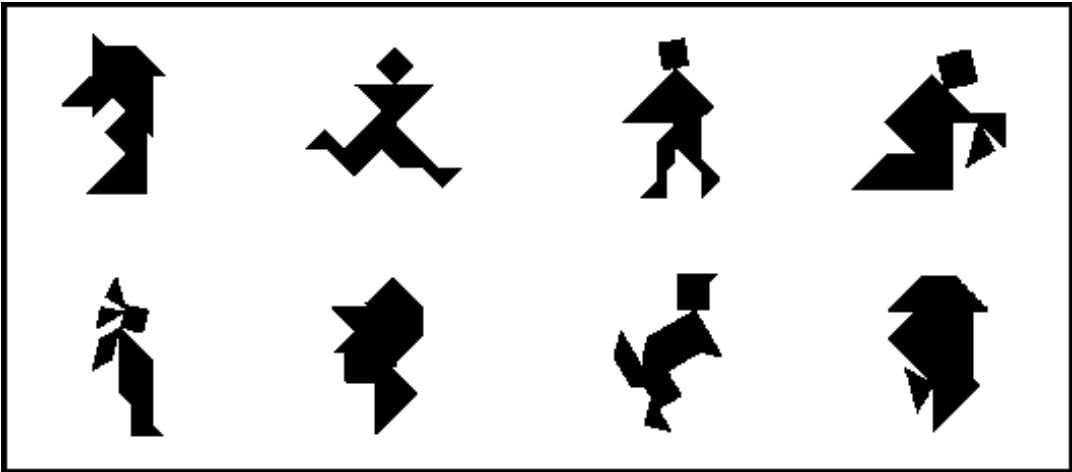


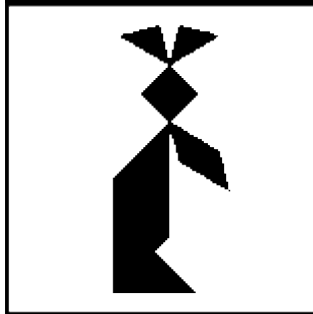
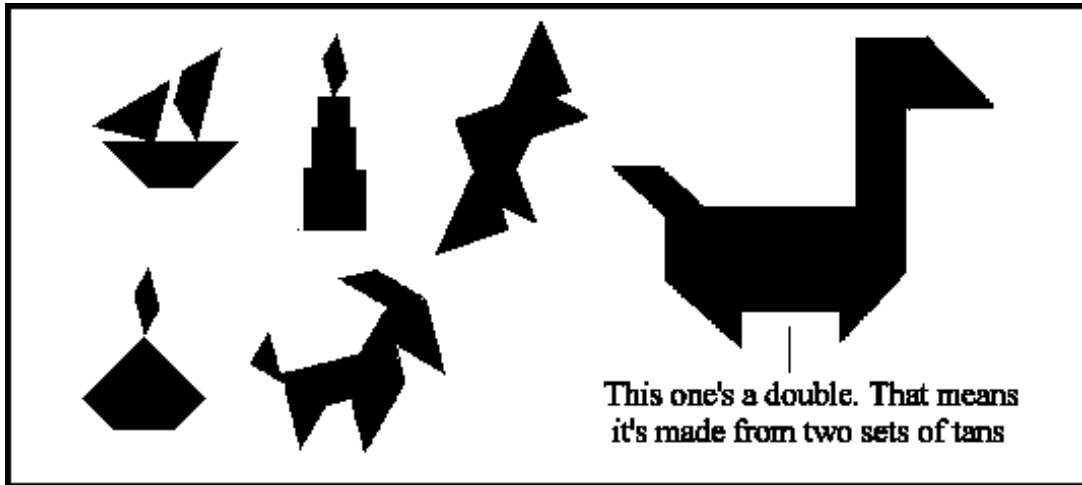


(Puzzles from [Randy's Tangrams.](#))









(Paradoxical Puzzles from "[El Tangram](#)".)

