

A g4-g8 chess conundrum

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Instructions: Cut out the square tetromino at the bottom of this page and the twelve pentominoes on the next page along the dotted lines.

Puzzle #1: Assemble the 13 pieces into a valid chess position where **black is checkmated**. Hint: the winning move for white was, naturally, g4-g8.

Puzzle #2: Assemble the 13 pieces into a (completely different) valid chess position where **white is checkmated**. Hint: the winning move was f5-g3.

The solutions are unique! See them at <http://www.gibell.net/puzzles/g4g8/> This puzzle was created as an exchange for the 8th Gathering for Gardner in 2008.

Clarifications:

1. What is a “valid chess position”? It is a board position that could appear during a chess game. There can be no pawns on ranks 1 or 8. Both kings cannot be in check. From the perspective of either player, the square in the lower right corner (h1) must be white. Standard chess notation is from white’s perspective, with columns (files) labeled a to h, left to right, and rows (ranks) 1 to 8, bottom to top.
2. Can the pieces be turned over? No. They are printed on one side only!
3. A special, rotationally symmetric chess font has been used, courtesy of Gary Katch at <http://alcor.concordia.ca/~gpkatch/>

| | King | Queen | Rook | Bishop | Knight | Pawn |
|-------|------|-------|------|--------|--------|------|
| White | | | | | | |
| Black | | | | | | |

4. A chess board must be properly checkered! The orientation of the diagonal lines marking the dark squares of the chess board is NOT significant. Below are two diagrams showing legal and illegal assembly of pieces:



