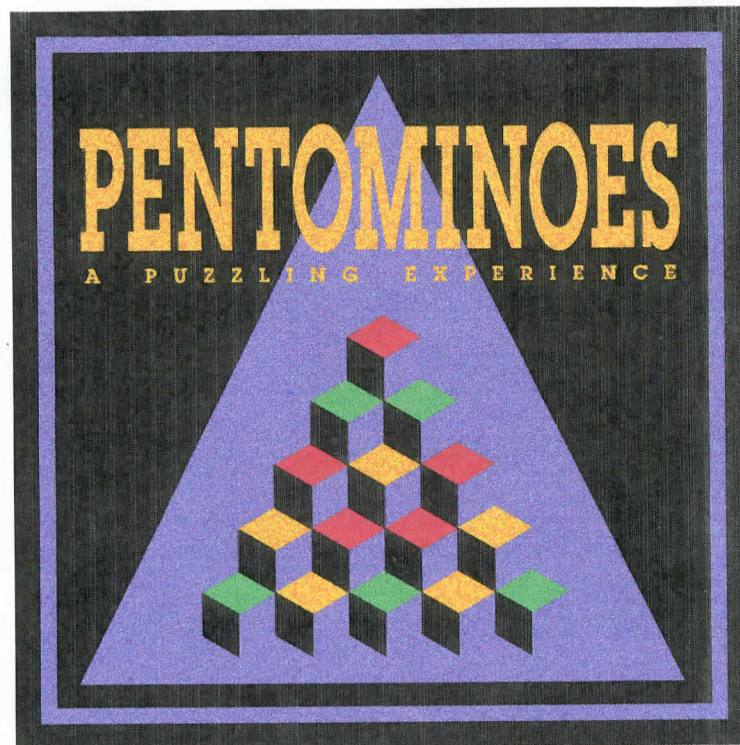
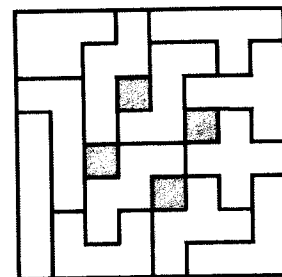
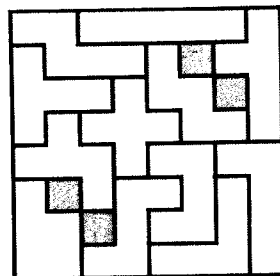
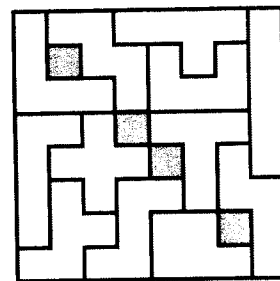
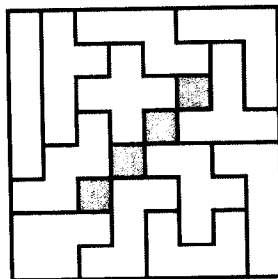
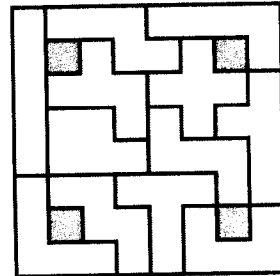
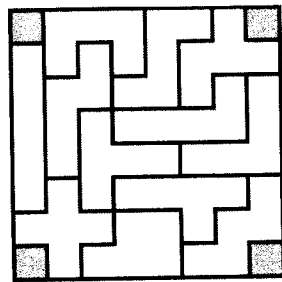
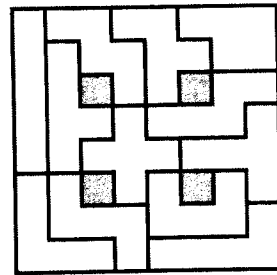
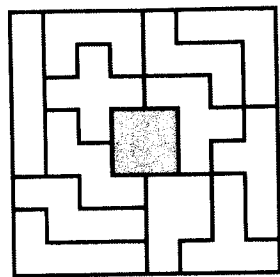


# SOLUTIONS for

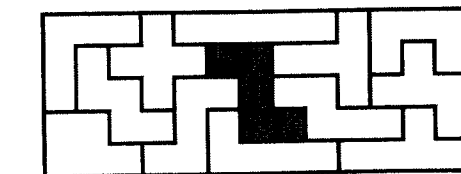
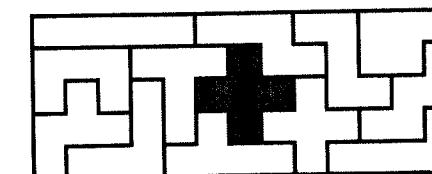
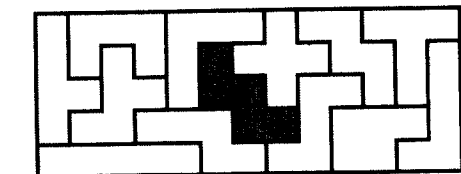
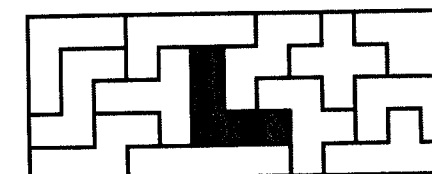
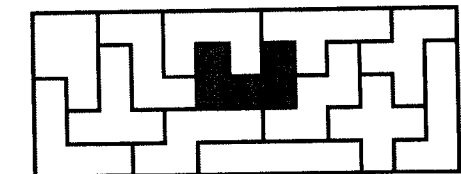
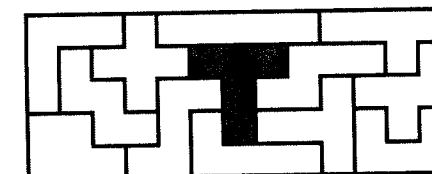
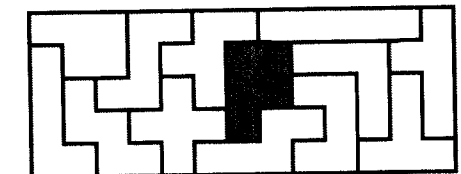
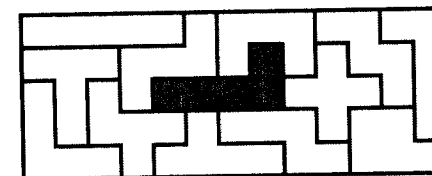
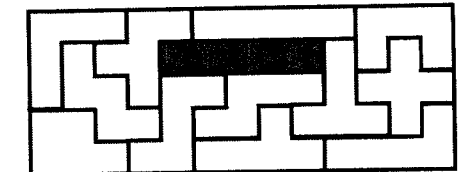
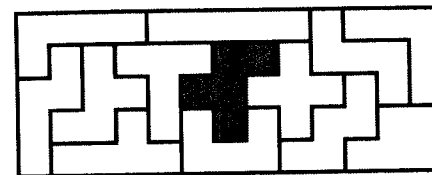
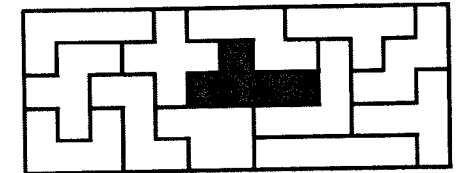
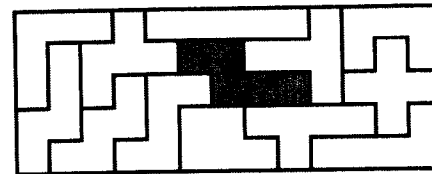


### Storage Solutions



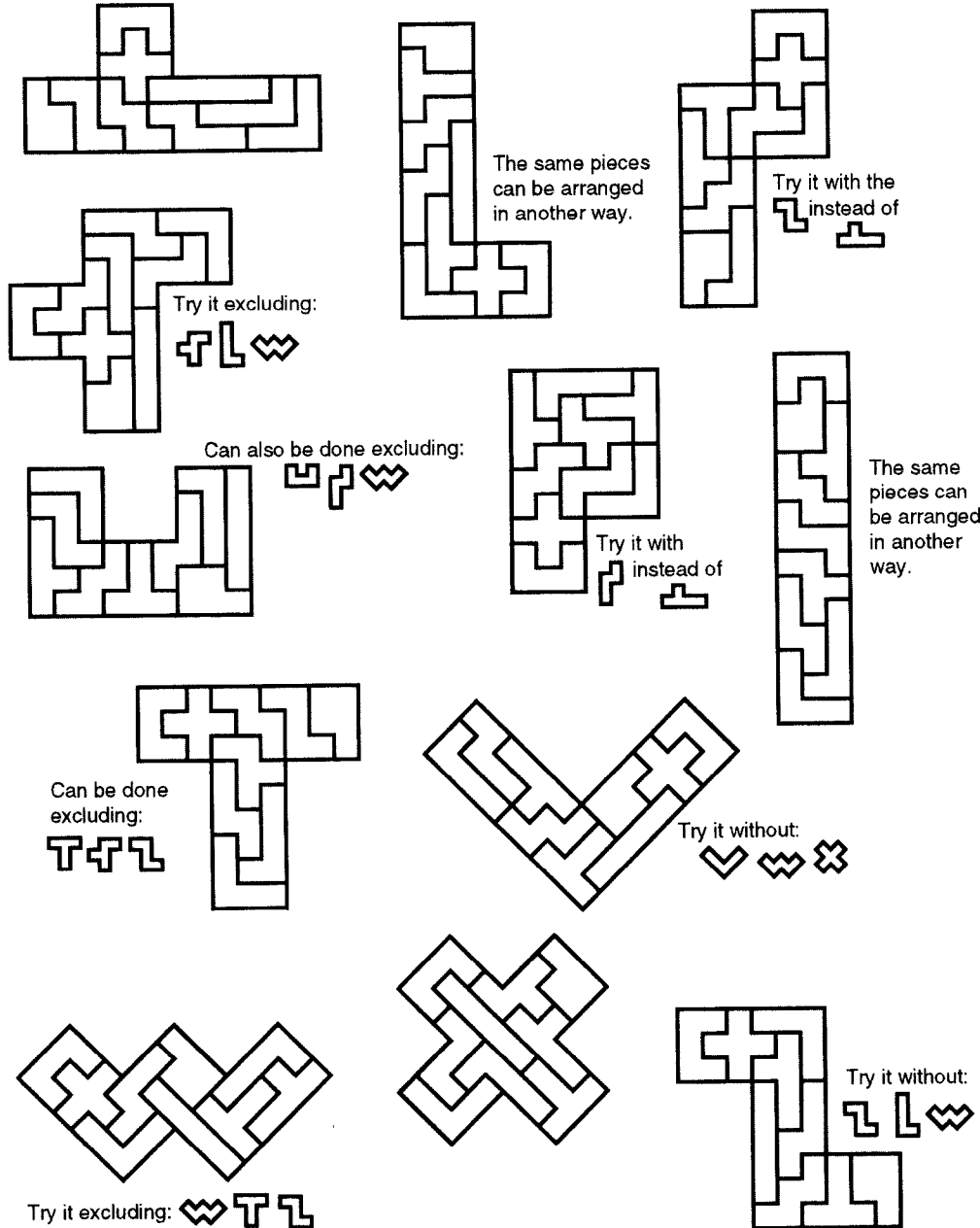
### "Extra" Piece Solutions

Using all of the pieces, construct a 5 x 13 rectangle with an empty space resembling a pentomino. The shaded area shows the location of the empty space which could be filled if you had an "extra" piece.






## Three Times Larger Solutions


Each pentomino can be made three times larger using nine of the twelve pieces. The piece you are copying and two others are excluded from the design. (Hint: the first design excludes )





The same pieces can be arranged in another way.


Try it with the  instead of .


Try it excluding: .


Can also be done excluding: .


Try it with  instead of .

The same pieces can be arranged in another way.

Can be done excluding: .

Try it without: .

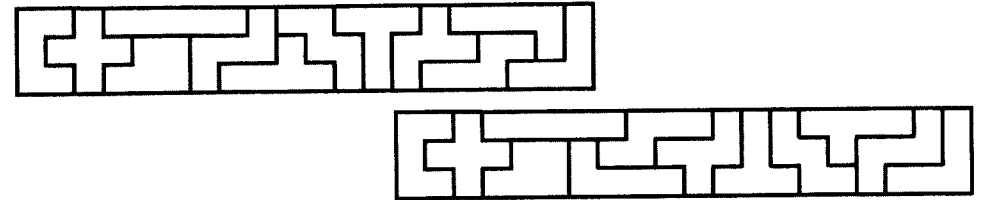
Try it without: .

Try it excluding: .

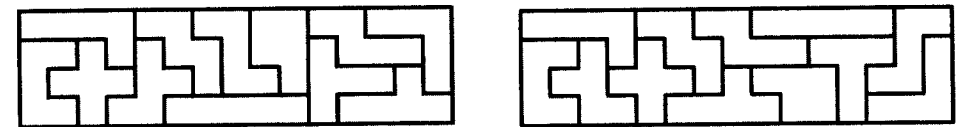
## 2D Solutions

Make the designs shown using all of the pieces.

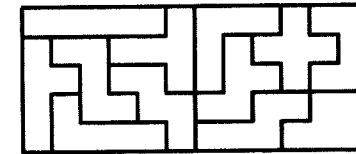
a) 3 x 20 rectangle (2 solutions)



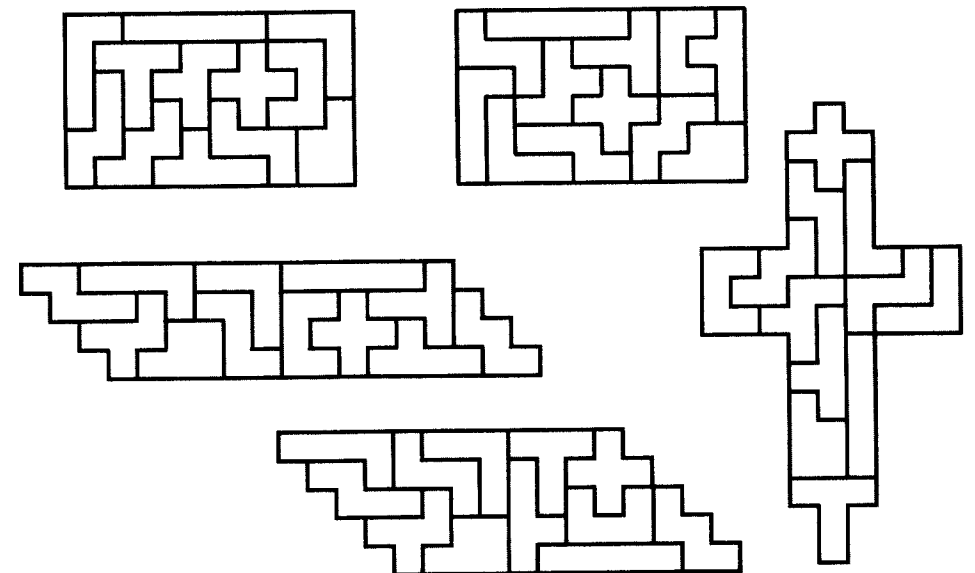
b) 4 x 15 rectangle (368 solutions)



c) 5 x 12 rectangle (1,010 solutions)

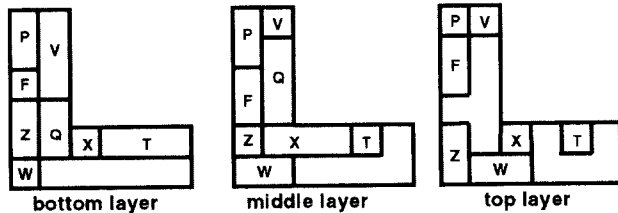
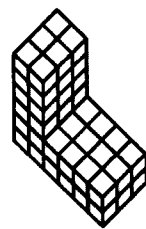
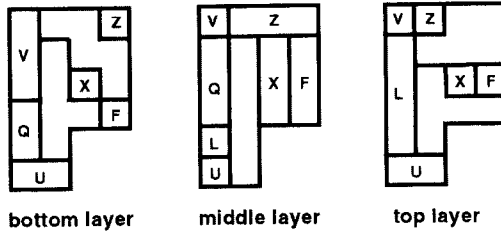
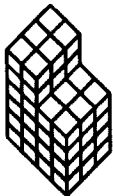
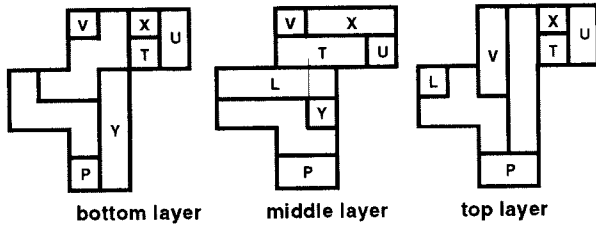
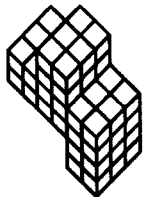
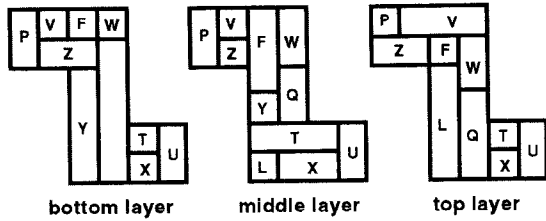
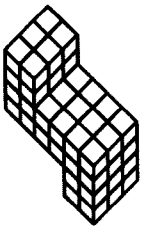
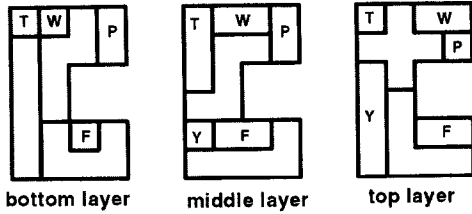
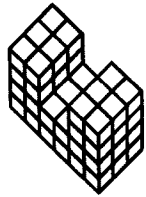


d) 6 x 10 rectangle (2,339 solutions)

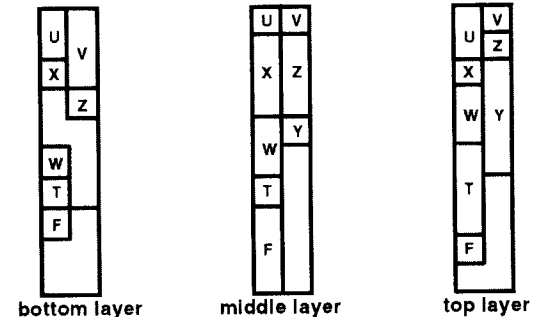
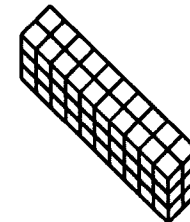
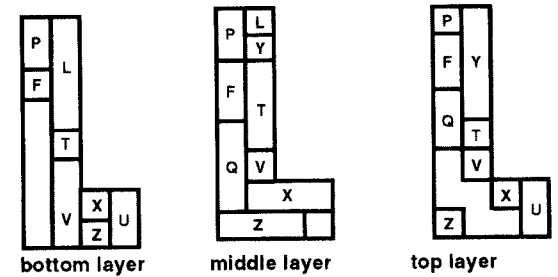
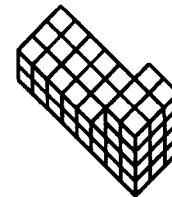
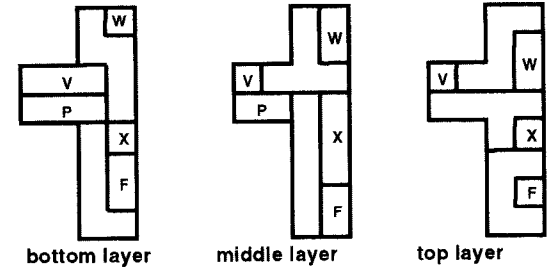
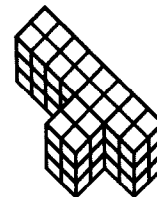
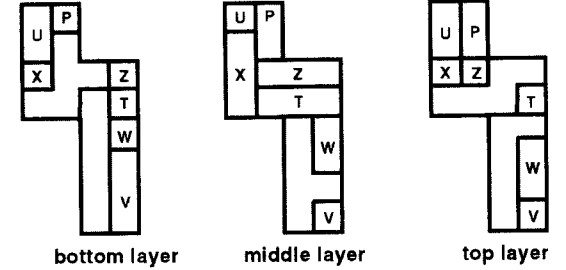
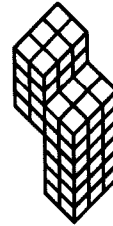
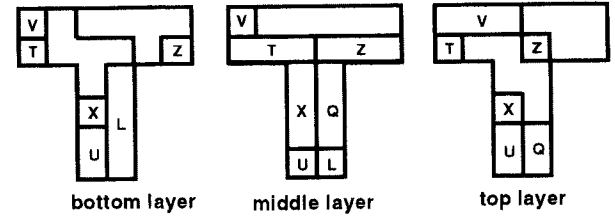
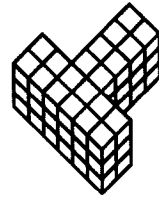


### 3D Pentomino Solutions

Using all of the pieces, make a 3D replica of each pentomino.  
The pentominoes resembling a w and an x cannot be replicated.



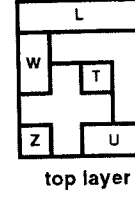
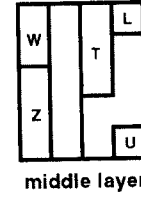
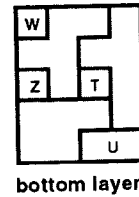
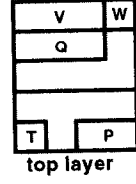
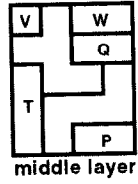
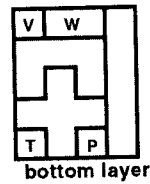
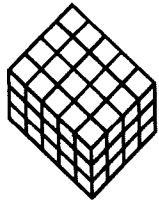
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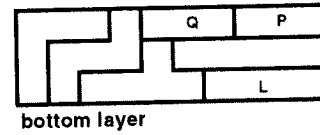
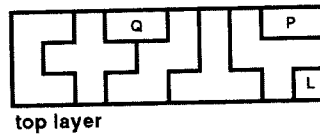
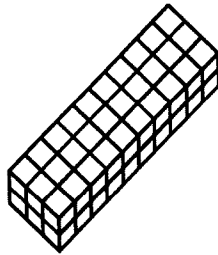
### 3D Solutions

Construct the designs shown using all of the pieces (except where noted).

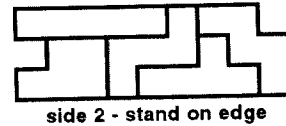
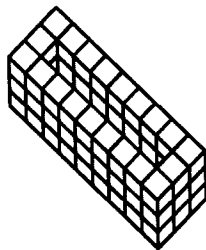
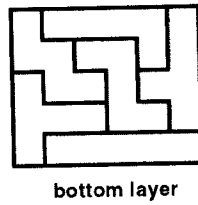
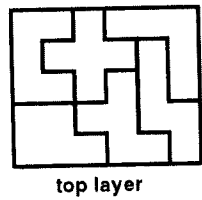
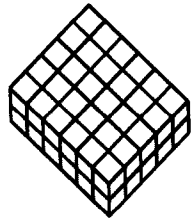
a) 3 x 4 x 5 (3,940 solutions)



b) 2 x 3 x 10 (12 solutions)



c) 2 x 5 x 6 (264 solutions)



d) Pyramid - only 11 pieces  
Exclude:

