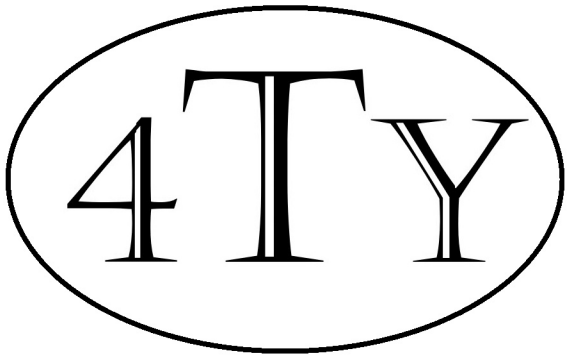
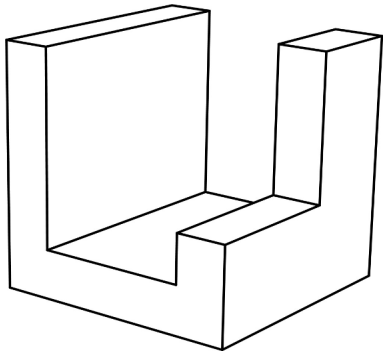
Object Rotation Test - 3 Dimensions (ORT-3)



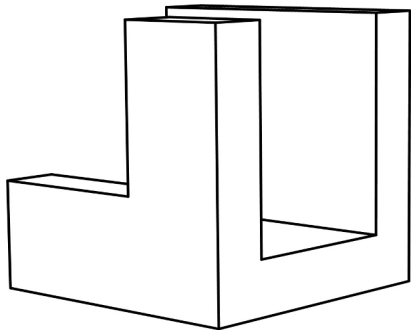
version 1.0

Directions

The 20 questions on this test assess how well you can rotate 3-dimensional objects. Here is an example:



is rotated to



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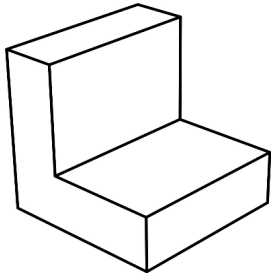
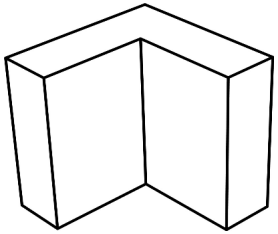
as

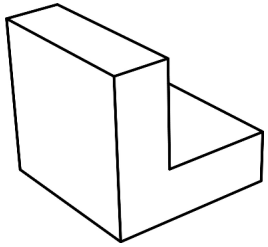


is rotated to

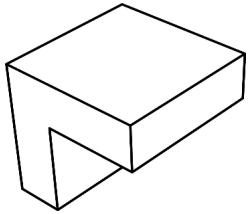
A



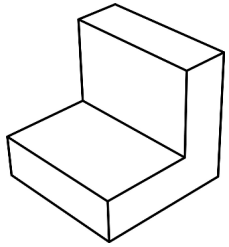
B



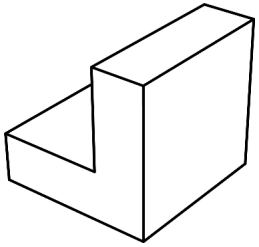
C



D



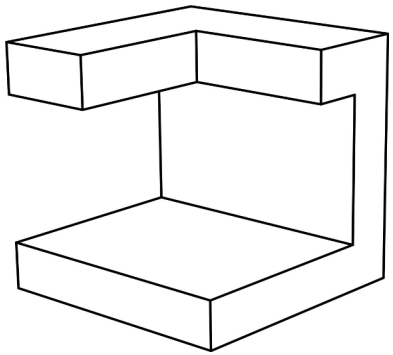
E



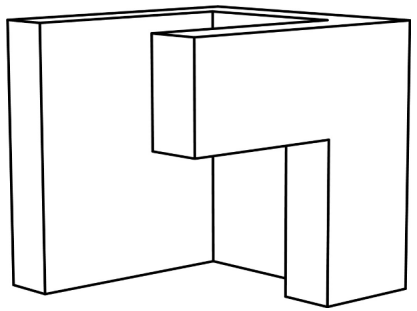
1) Study the two figures in the top row. See how the object on the left is rotated to look like the one on the right.
2) Look at the figure in the center row. Picture in your mind, what it will look like when rotated just like the top figure was rotated.
3) Choose which of the 5 drawings in the bottom row - A, B, C, D, or E - looks like that.
4) Mark the answer ON YOUR ANSWER SHEET - do not mark the drawings.

In this case figure D shows how the middle-row figure would look, when rotated like the top-row figures. So mark D on your answer sheet.

1



is rotated to



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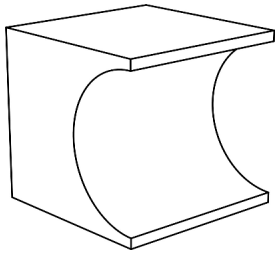
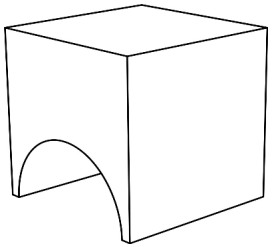
as

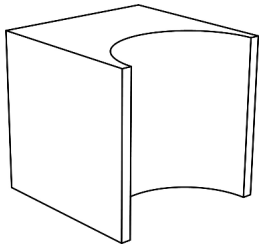


is rotated to

A



B



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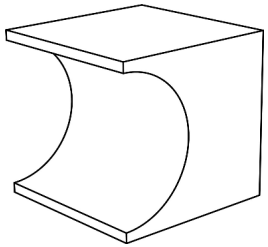

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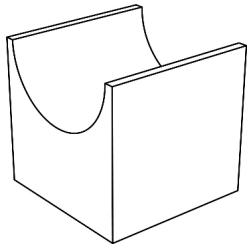

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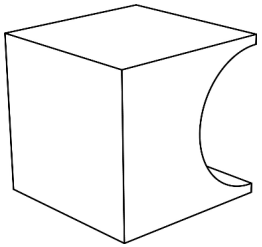

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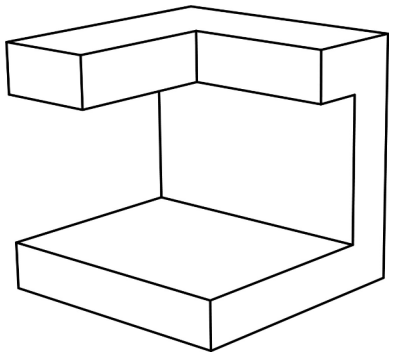
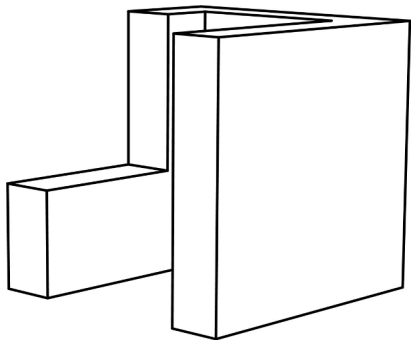


is rotated to



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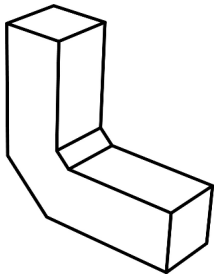
as



is rotated to

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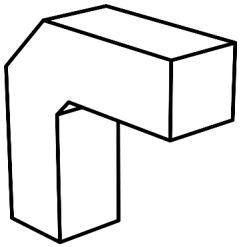

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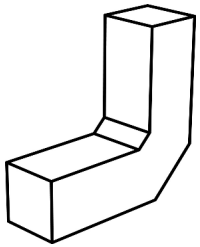

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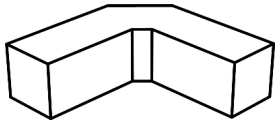

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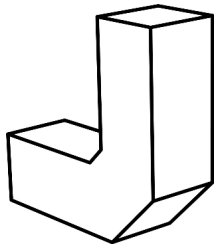

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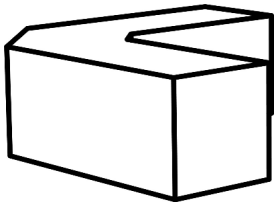

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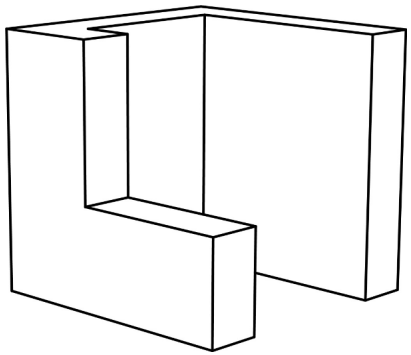

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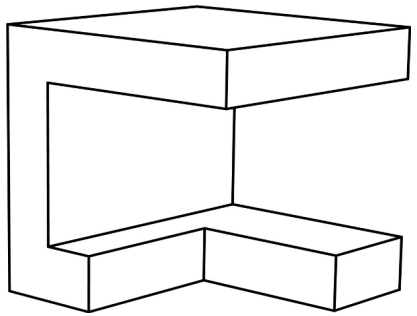

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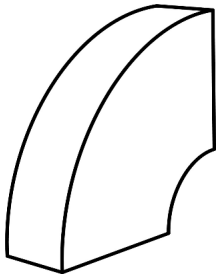

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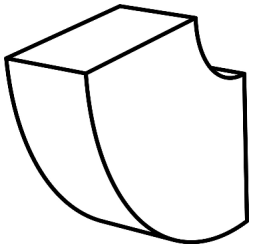

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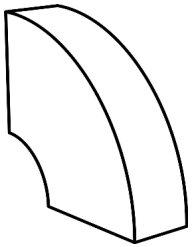

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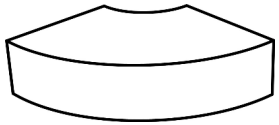

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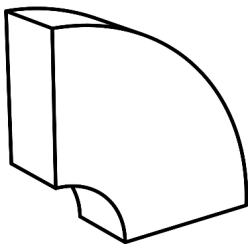

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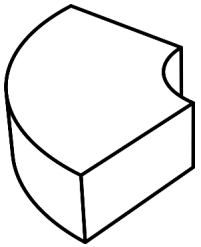

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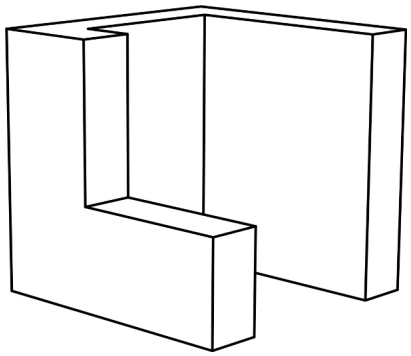

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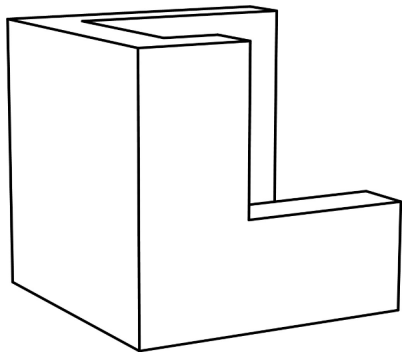

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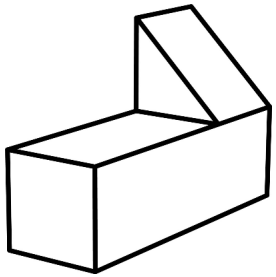

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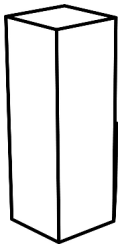

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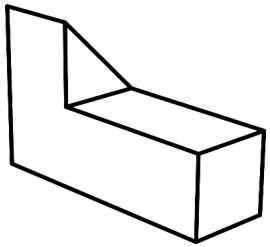

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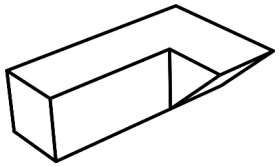

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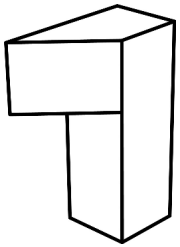

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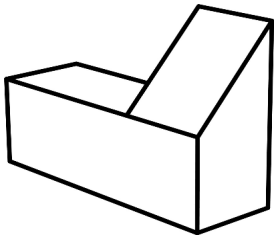

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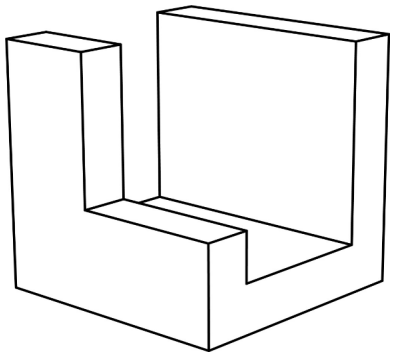

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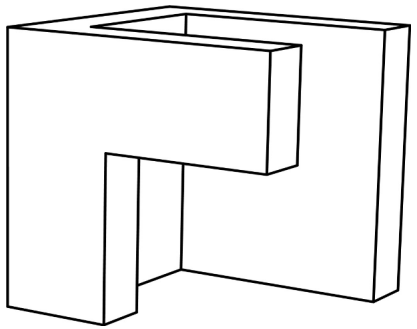

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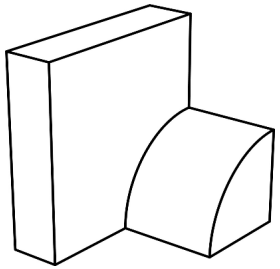

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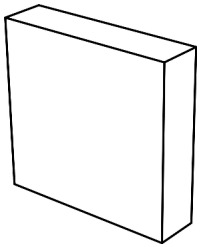

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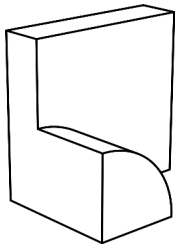

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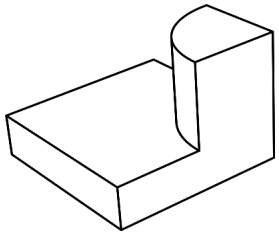

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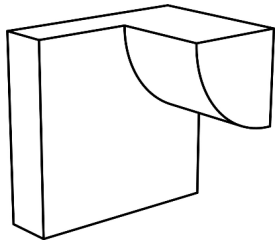

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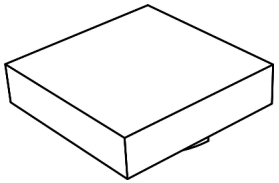

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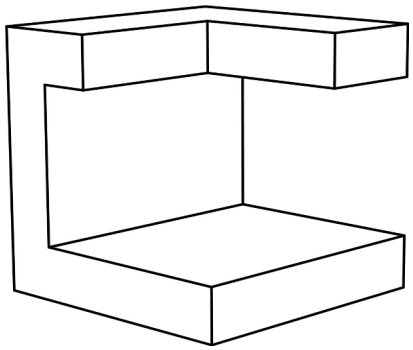
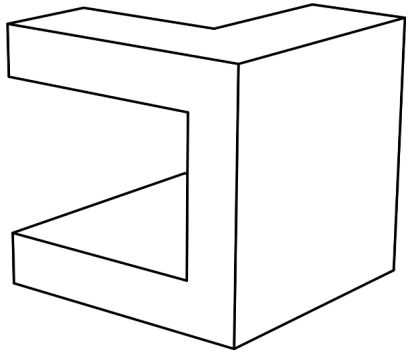


is rotated to



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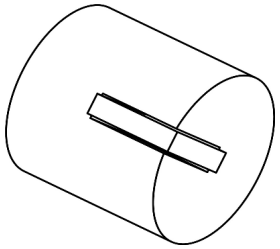
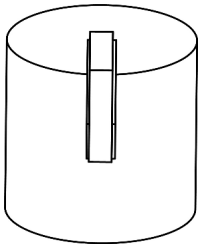
as

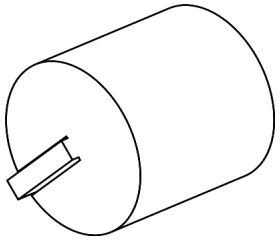


is rotated to

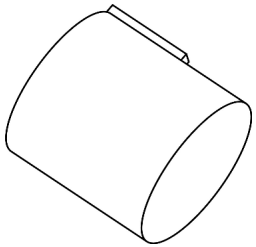
A



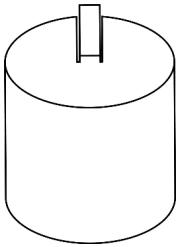
B



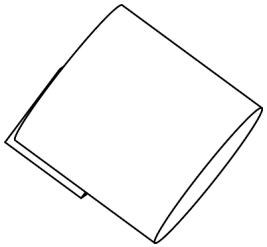
C



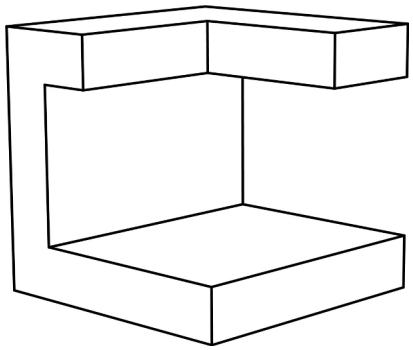
D



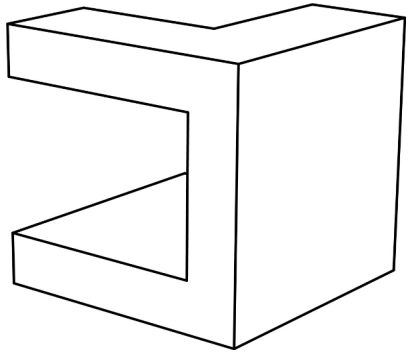
E



7



is rotated to



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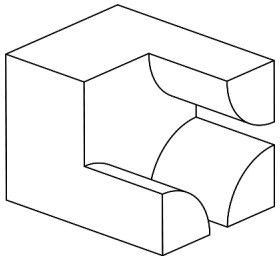

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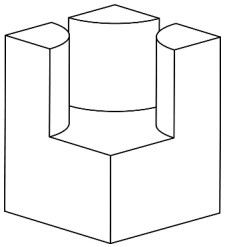

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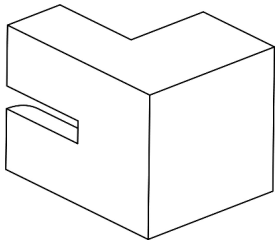

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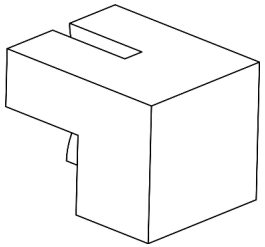

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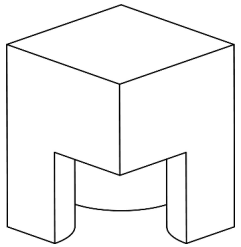

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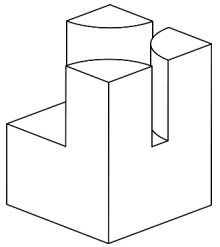

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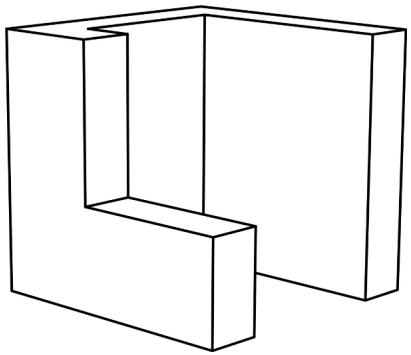

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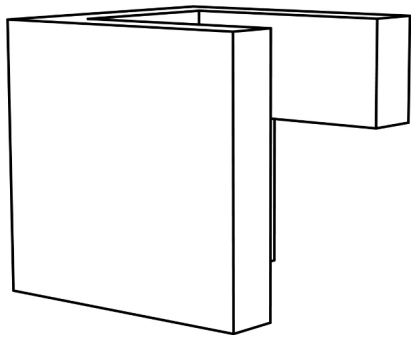

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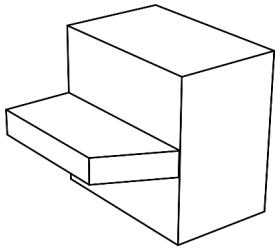

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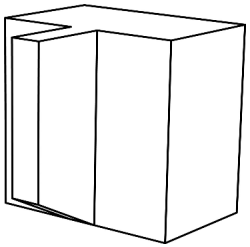

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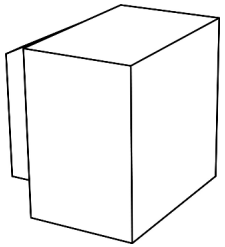

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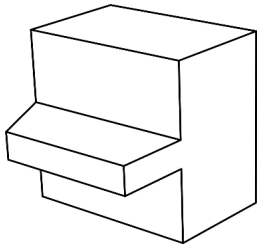

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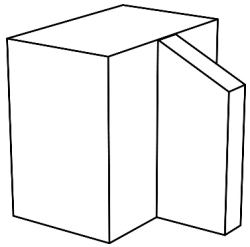

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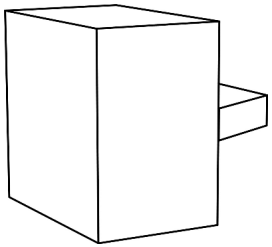

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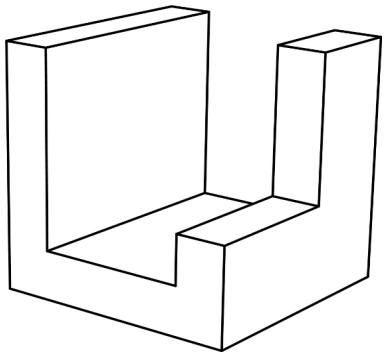

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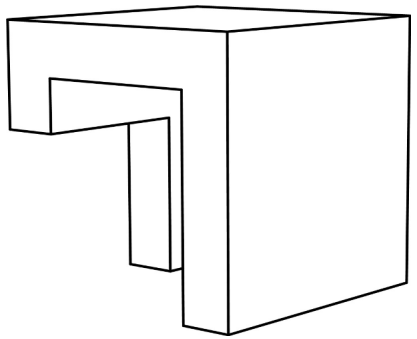

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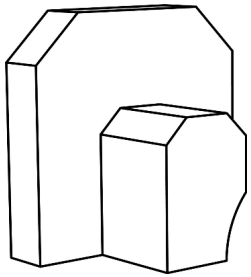

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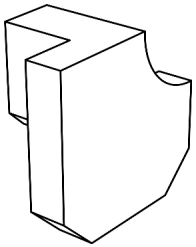

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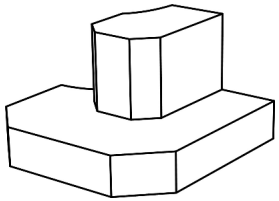

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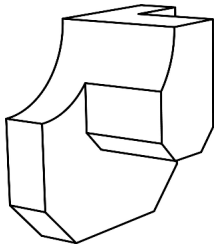

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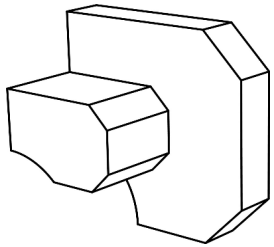

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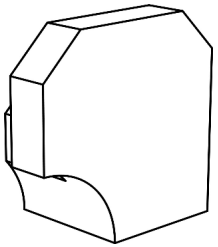

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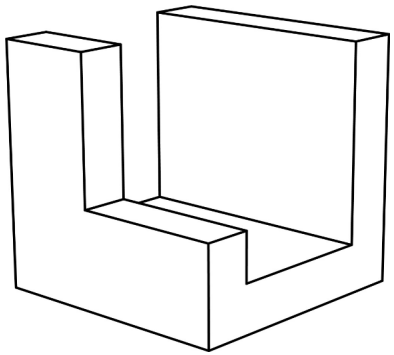

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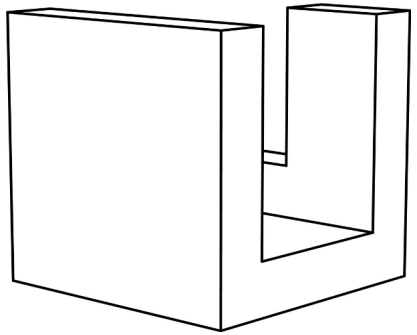

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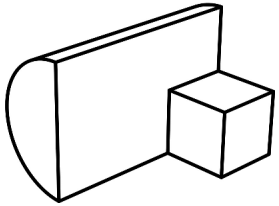

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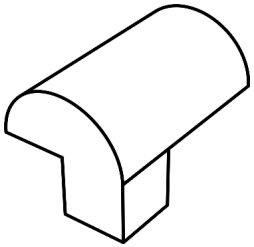

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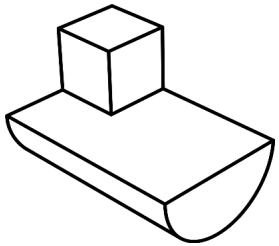

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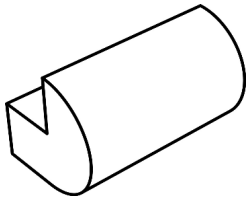

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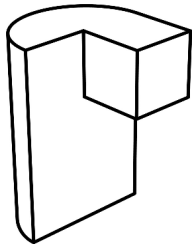

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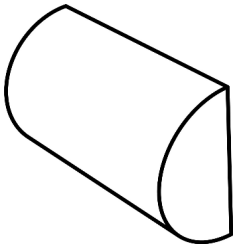

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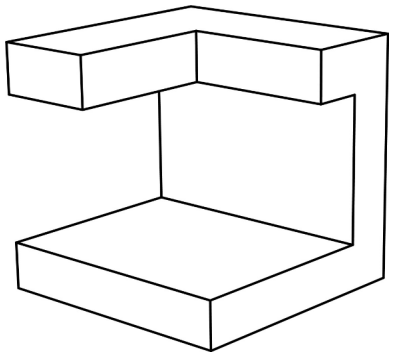

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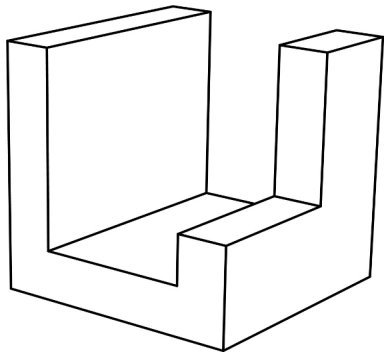

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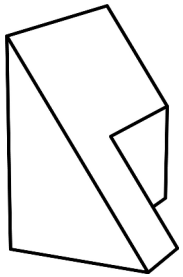

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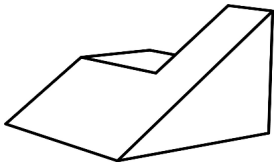

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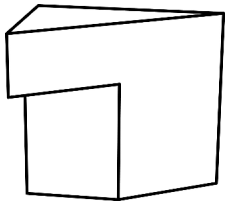

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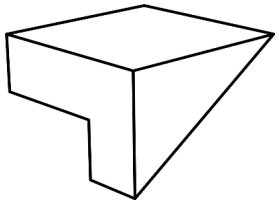

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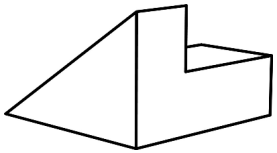

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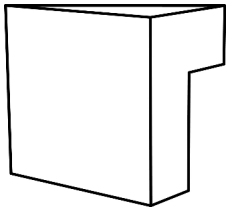

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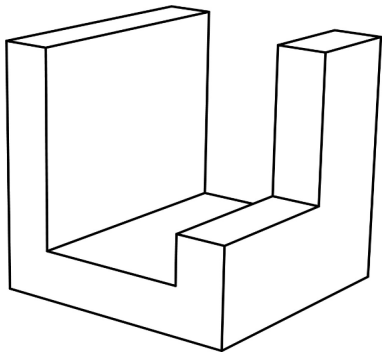

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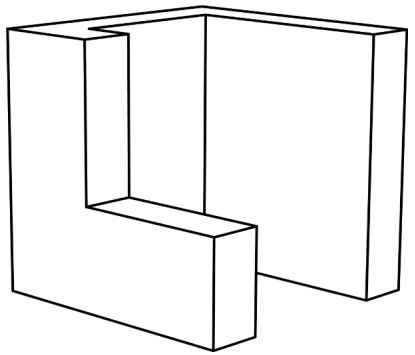

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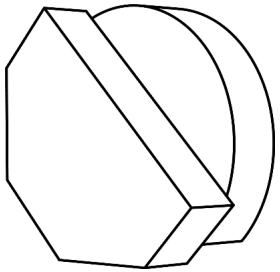

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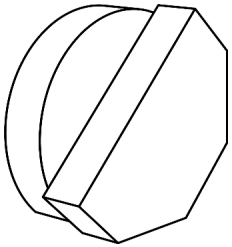

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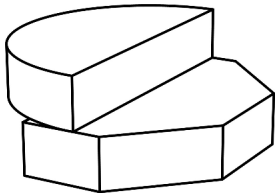

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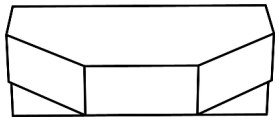

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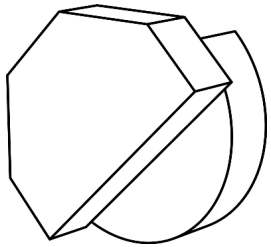

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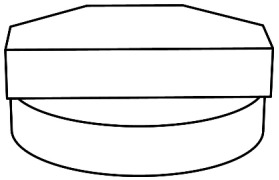

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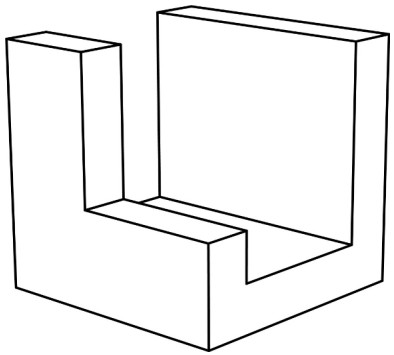

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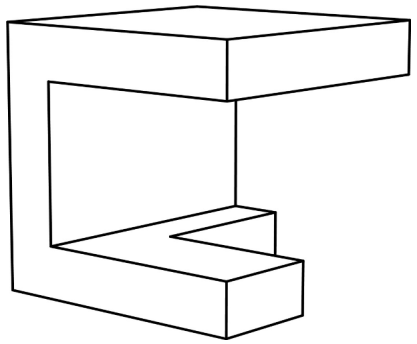

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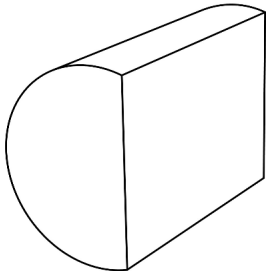

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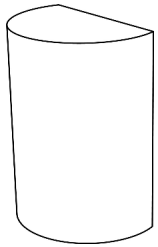

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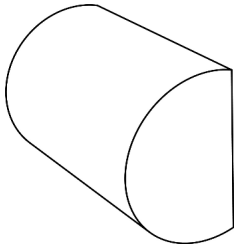

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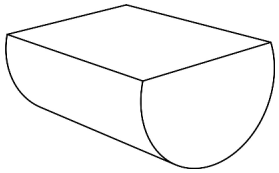

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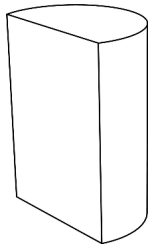

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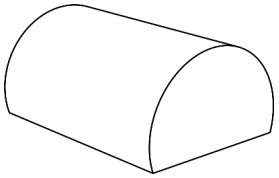

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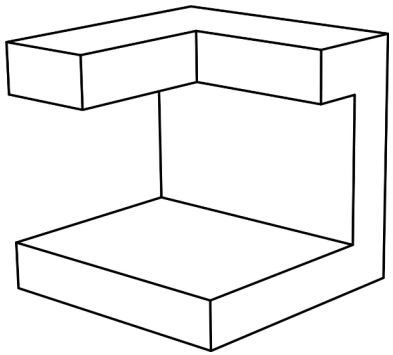

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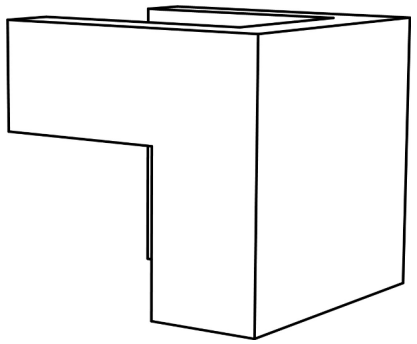

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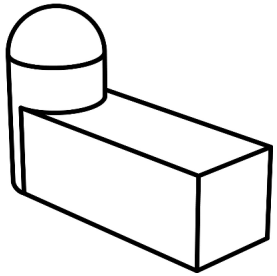

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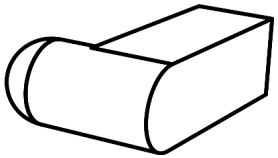

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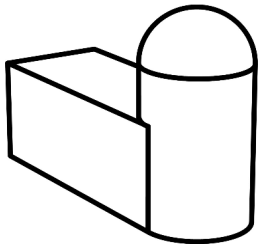

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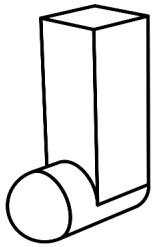

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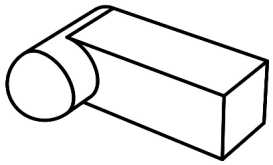

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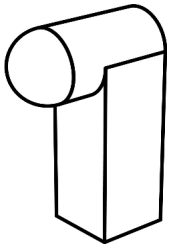

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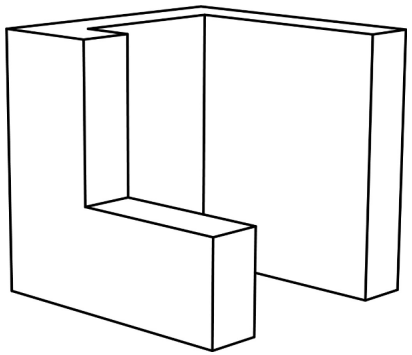

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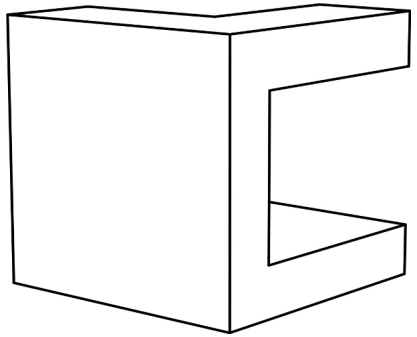

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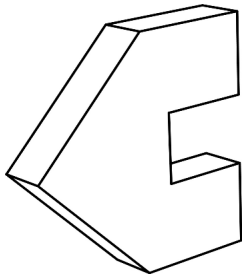

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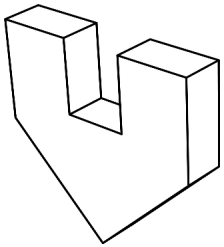

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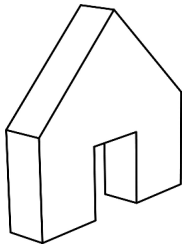

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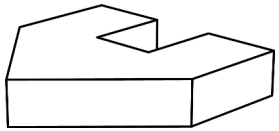

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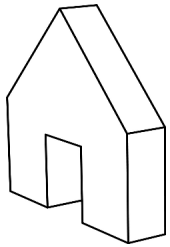

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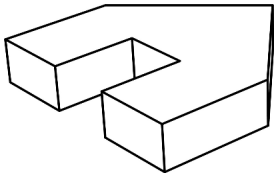

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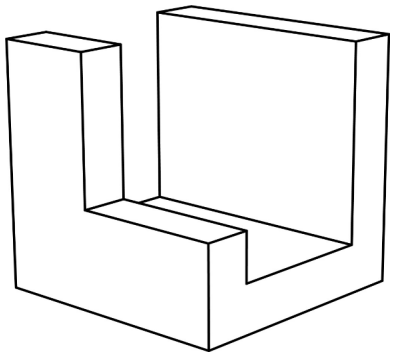

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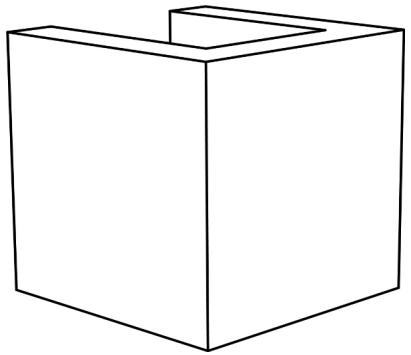

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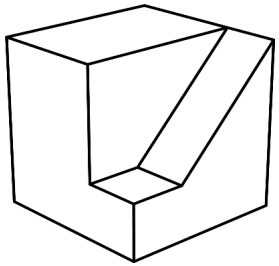

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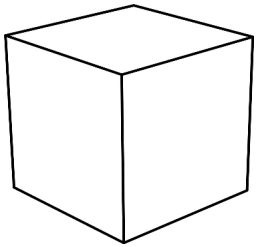

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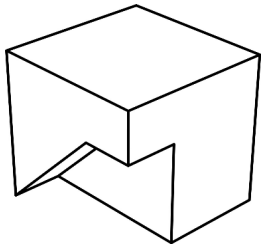

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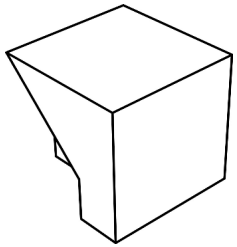

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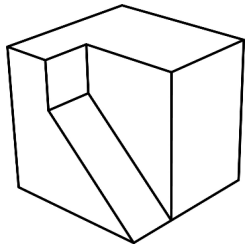

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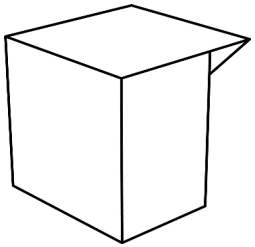

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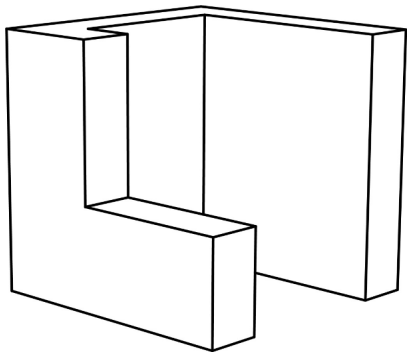

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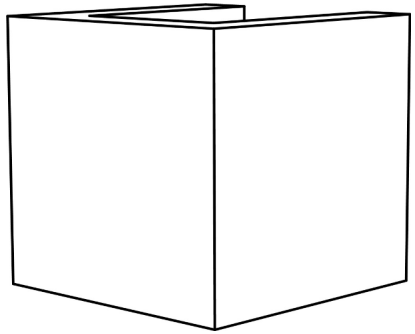

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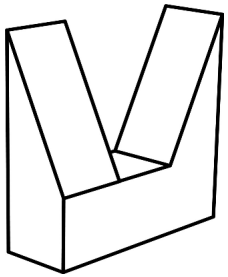

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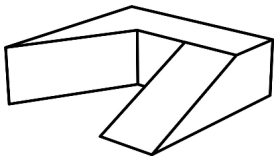

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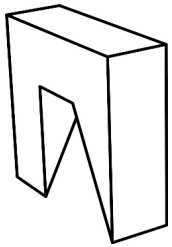

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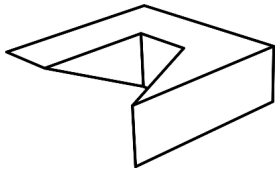

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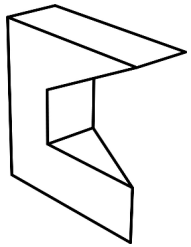

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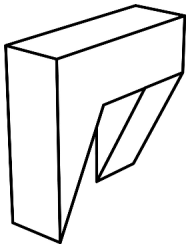

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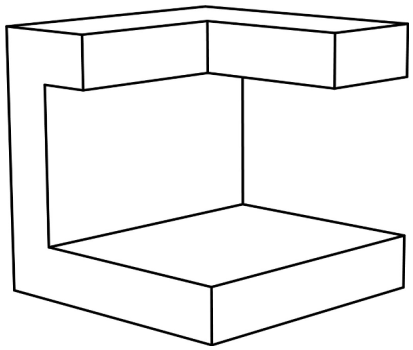

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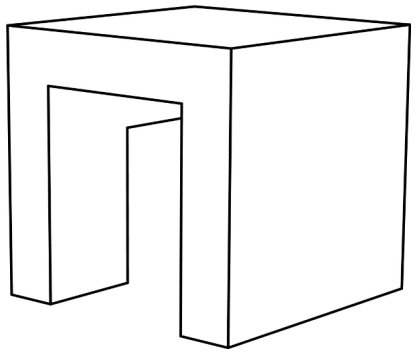

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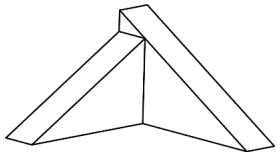
as  is rotated to

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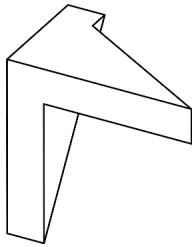

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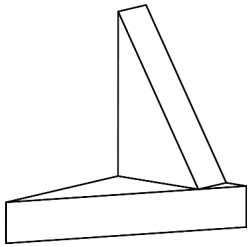

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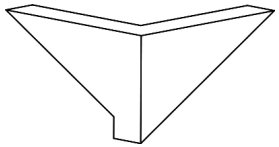

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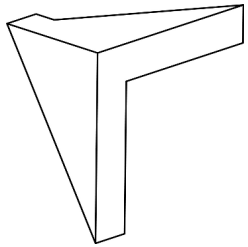

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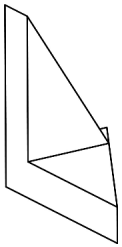

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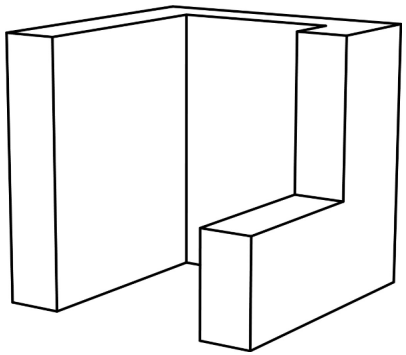

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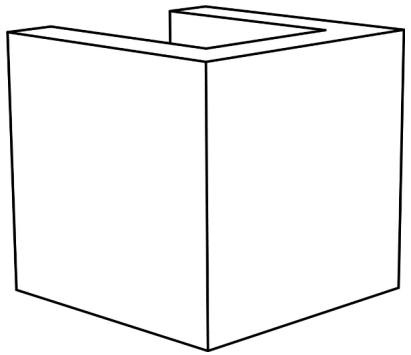

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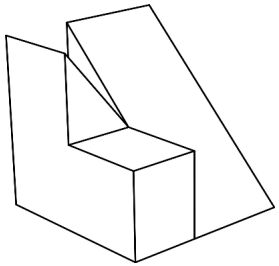

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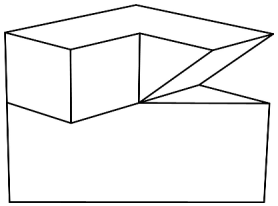

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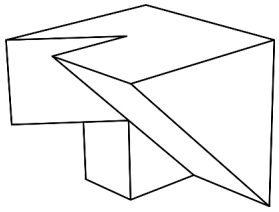

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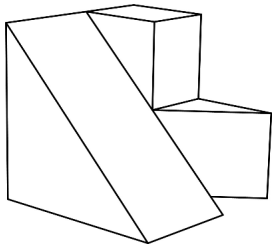

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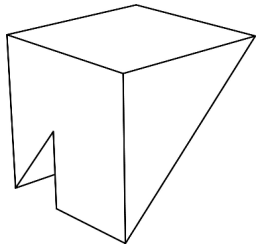

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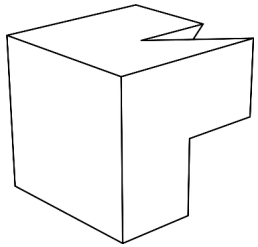

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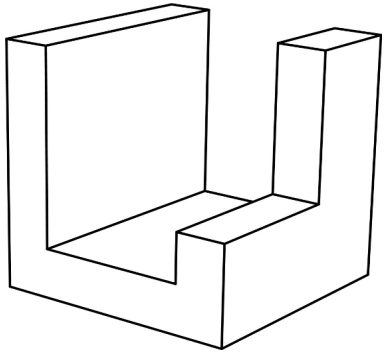

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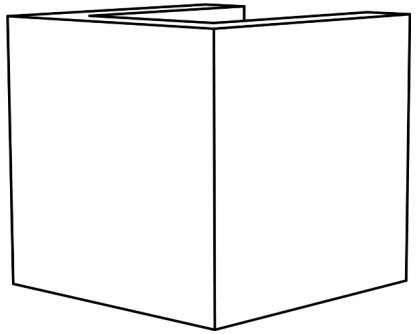

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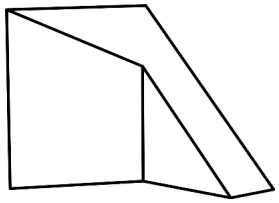

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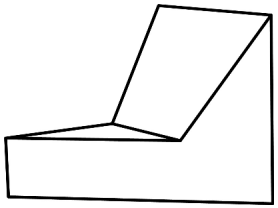

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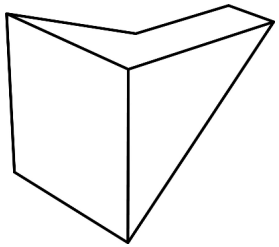

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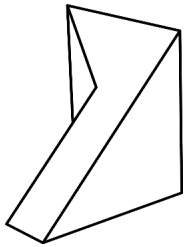

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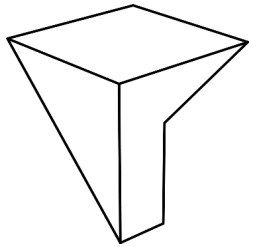

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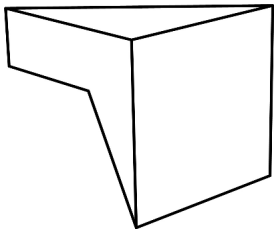

Open Rotation Test 3 (ORT-3)

In memoriam and with gratitude to George M. Bodner and Roland B. Guay

This work uses concepts by Bodner and Guay (1997), who freely offered their work, writing: "Copies of the 20-item Purdue Visualization of Rotations test and a scoring key can be obtained from the first author. They can also be downloaded from this journal's abstract page for this article. Permission to use this test is freely granted. Reasons to use this test are many and varied. It can be used to diagnose ... It can be used as a research instrument ... It can be used to probe changes in gender effects on spatial ability. It can be used as the basis for evaluating courses ... It can be used to probe students' perception ..." [et cetera]

Beyond Bodner and Guay's freely offered permission, no artwork nor object object used in the ORT-3, is a drawing or redrawing of any of their work. All ORT-3 material is original artwork consisting of original drawings of distinct, different, original objects.

Thanks to the Ad Hoc ORT-3 Clean Room team for creating original 3-dimensional objects used as basis for the drawings included in the ORT-3. More information about clean-room design is available at https://en.wikipedia.org/wiki/Clean-room_design.

Reference:
Bodner and Guay (1997)
The Purdue Visualization of Rotations Test; George M. Bodner and Roland B. Guay; The Chemical Educator, Volume 2, No. 4
DOI: 10.1007/s00897970138a