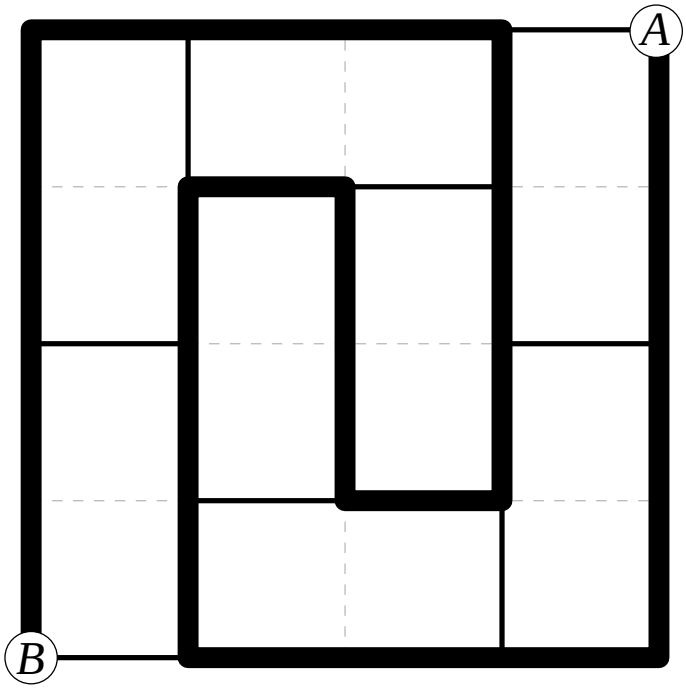
I U P U I
Math Club Teaser #22

April 24, 2009
(due May 1, 2009)

Solution

We can use at most **14** segments from the outer square; otherwise the resulting shape is not a *path* from A to B. For the same reason, we can use at most **8** segments from the inner square (including the two central segments). Also, a longest path requires exactly **2** segments to enter and leave the inner square (any extra segment connecting the inner and outer squares requires the removal of an inner segment AND an outer segment). That gives a maximum possible of **24** segments, which the following figure realizes:



Solved by:

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