

Triangular Teaser

by **Dave Youngs**
AIMS Research Fellow

This month's *Puzzle Corner* activity challenges students to fit five puzzle pieces into a triangular frame. This puzzle is a great example of the field of recreational mathematics—doing math just for the fun of it. Dr. Richard Thiessen, President of the AIMS Education Foundation, created this puzzle and several others like it after attending the 26th International Puzzle Party (IPP) in Boston last summer. The International Puzzle Party, or IPP as it is known in recreational mathematics circles, is an annual event where puzzle creators and collectors gather to discuss, show, and trade mechanical puzzles. Included in this yearly gathering that rotates between cities in North America, Europe, and Asia, are people like Will Shortz, puzzle editor of the *New York Times*, and Jerry Slocum, founder of the IPP and a historian, collector, and author specializing in the field of mechanical puzzles. (Slocum's personal puzzle collection includes more than 40,000 mechanical puzzles and 4500 puzzle books and is believed to be the world's largest.)

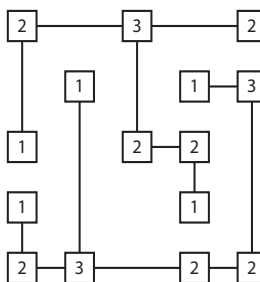
One of the puzzles Richard saw at IPP 26 was a six-piece puzzle created by Vladimir Krasnoukhov. The pieces of this puzzle, when correctly assembled, create a pentagon with a hexagonal hole inside. Being a geometer, Richard was very interested in the mathematics involved in the puzzle and quickly worked out the angles of the various puzzle pieces—just for the fun of it! In doing this, he realized that he could make similar puzzles with this interesting geometric property—an exterior polygon with an interior polygonal space that had one more side. He quickly created a square with a pentagonal hole inside and then a triangle with a square hole inside—which is the model for the puzzle presented here. The only change that has been made to Richard's puzzle is that the interior square is included as one of the puzzle pieces. This makes the puzzle slightly less frustrating for students.

I hope that you and your class find this puzzle challenging and enjoyable. The solution will appear in the next issue. If you need the solution before then, or have any other questions or comments, please contact me at dyoungs@fresno.edu or at the AIMS address found on the back cover of this magazine.

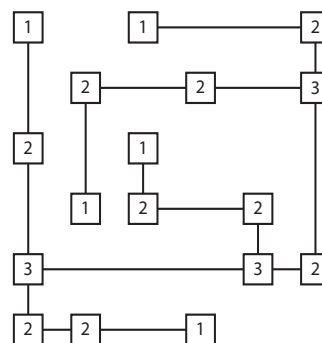
Last Issue's Puzzle

In *Linking Bridges*, students were challenged to connect islands with bridges so that the number of bridges going to each island corresponded to the number written on that island. Additionally, bridges could not cross, go through islands, or go diagonally, and there could not be more than one bridge between the same two islands. The solutions are shown here.

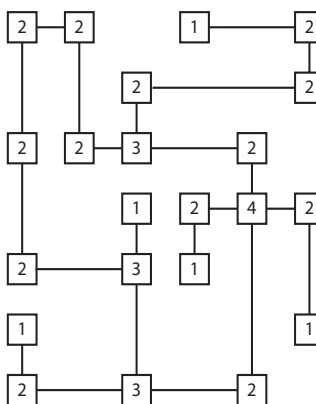
Problem One



Problem Two

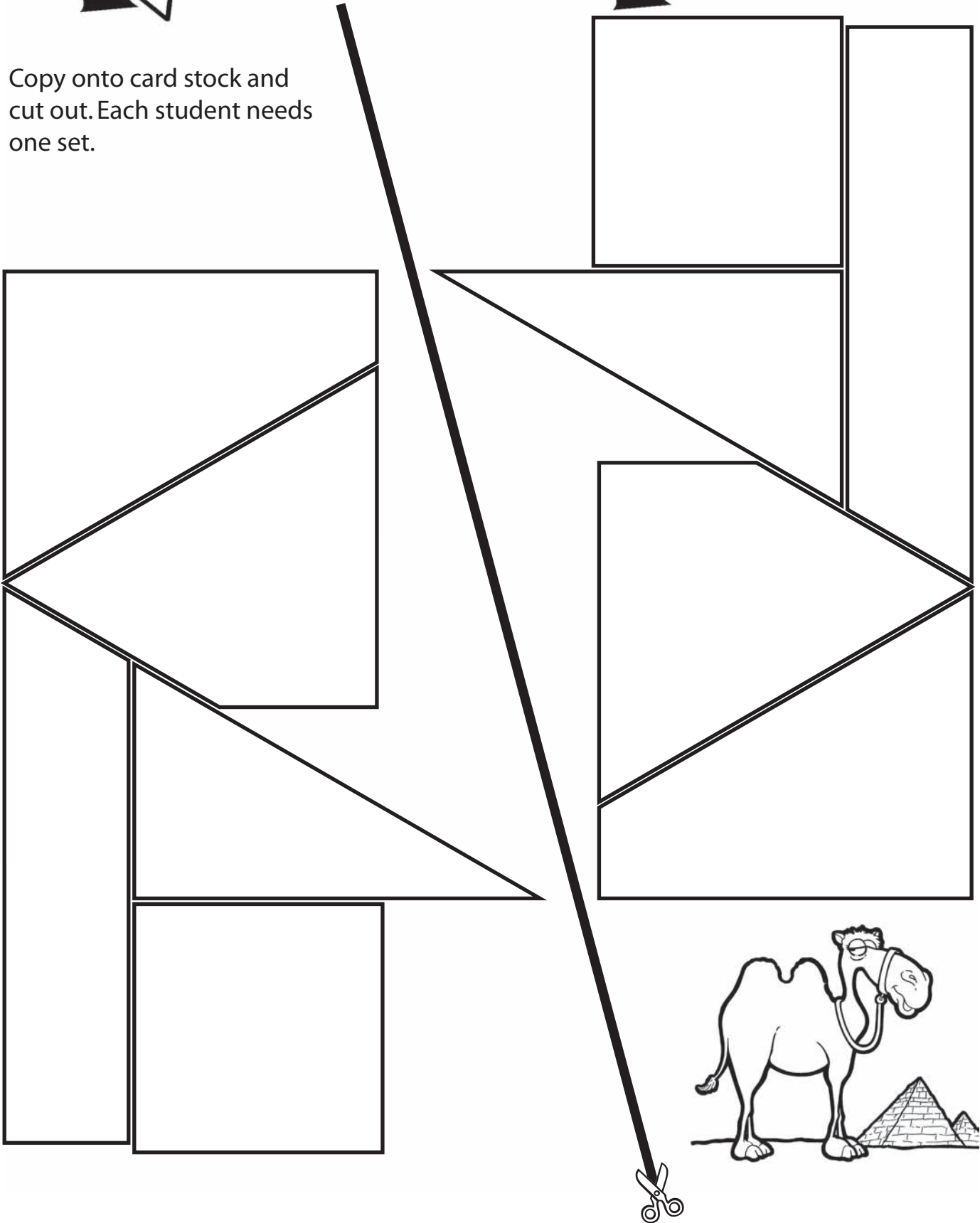


Problem Three



Triangular Teaser

Copy onto card stock and cut out. Each student needs one set.



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Use your puzzle pieces to fill the triangle below. Once you are done, record your solution by tracing around the pieces to show how they fit together.

