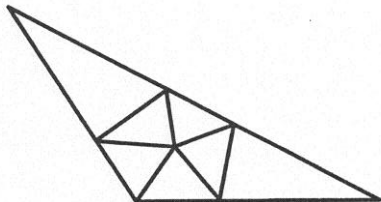


It's a Puzzlement

By John P. Robertson

Acute Dissections

The diagram sent in by **Dmitry Papush** (below) shows the essentially unique way to divide an arbitrary obtuse triangle into seven acute triangles, and this is the minimum possible. Clearly at least one new line must intersect the obtuse angle. If this new line crosses to the other side, then at least one of the



two resulting triangles must be obtuse. Thus, for a minimal solution, this line must end in the interior of the original triangle. There must be at least four other lines emanating from the end of the first line in order that all of the angles created are acute. If any of these lines meet a side of the triangle, some other line must also meet there; otherwise, there would be a new obtuse angle. A little futzing should convince you that one cannot get as good a solution from any arrangement other than the one shown in the diagram.

For a square, the minimum number of acute triangles is eight.

Solutions to the triangle dissection were also submitted by

Anonymous, Ty Detmer, **Jeff Edinger**, Nathan Schwartz, and Michael Singer. **Dmitry Papush** and Nathan Schwartz also sent in solutions to the square dissection.

The Snowplow

Snow falls at a steady rate. A snowplow starts at 6:00 A.M., drives in a straight line, and removes snow at a constant rate (in cubic feet per minute). In particular, the deeper the snow gets, the slower the snowplow goes. The plow goes twice as far in the first hour as in the second hour. When did it begin to snow? ■