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Geometric view connecting determinants and area.

Consortium 108, 1-2 (2015).

Summary: I love finding new and interesting proofs and demonstrations of geometric theorems particularly ones that are visual. One of my favorite theorems in coordinate geometry states that the area of the parallelogram $ABCD$ with vertices at $A(0,0)$, $B(a,b)$, $C(a+c,b+d)$ and $D(c,d)$ is equal to the product $ad - bc$. This edition's Column gives a nice visual demonstration, using Geometer's SketchPad, of this theorem when applied to any parallelogram, not just one with a vertex at the origin.

Classification: G70 U70 E50

Keywords: analytic geometry; Cartesian geometry; coordinate geometry; parallelograms; area; visualization; geometric proofs; geometry software; determinants; linear algebra; vectors; rectangles; trapezoids