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Polyiamonds.

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From the text: Polyiamonds are geometric figures formed by attaching equilateral triangles edge-to-edge in the plane without creating holes. Two sample polyiamonds are shown. Figure 1 shows a polyiamond obtained from a simple (non-self-intersecting) polygon by subdividing it into equilateral triangles, while Figure 2 has “internal” vertices. Our goal will be to show some properties of polyiamonds and indicate how much is still not known about these easy-to-describe and “experiment with” geometric objects.

Classification: K30 K20

Keywords: nets; polyhedra; equilateral triangles; graph theory; combinatorics; plane graphs; Euler’s polyhedral formula; convex polyhedra; medial graphs; bipartite graphs; length; convex deltahedra; planar 3-connected graphs; Diophantine equations; polyiamonds