How close to being platonic can you get?

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A *Platonic graph* is a vertex-regular planar graph with all faces of the same size. It is well known that there exist exactly five such graphs: tetrahedron, octahedron, hexahedron, icosahedron, and dodecahedron.
A *p-nearly Platonic graph* of type (k, d) is a k-vertex-regular planar graph with all faces but p of the same size d while the remaining p faces have different size.

Recently, William Keith asked whether there exist 1-nearly Platonic graphs (called simply *nearly Platonic*). That is, vertex-regular planar graphs with all faces except one having the same size. W. Keith, D. Kreher and the speaker then showed (or at least believed that they had shown) that no such graphs exist.

On the other hand, there are well known classes of 2-nearly Platonic graphs with exactly two exceptional faces, both of the same size. We will ask (and partially answer) some questions about 1-, 2- and 3-nearly Platonic graphs.

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