Remarks on the paper "Tiling of regular polygon with similar right triangles, II" by Leonid Vigdorchik

The main result is that, apart from some exceptional cases, the regular n-gon cannot be tiled with right triangles with acute angle $(n-2)\pi/(3n)$. It is known that if $n \geq 4$ then the only right triangle that tiles the regular n-gon has acute angles π/n and $(\pi/2)-(\pi/n)$. However, the proof of this general theorem uses advanced methods, and it makes sense to check how far we can get with elementary methods.

As far as I see, the proof of the theorem is correct. I only have two minor remarks.

First, the theorem could be improved slightly: the condition $n > 8$ could be replaced by $n \neq 4, 5, 8$. Indeed, the proof of Lemma 2 actually gives that the exceptional values are $4, 5, 8, 14, 20, 32$.

As for Lemma 3, the condition $n > 8$ is used only in the case $b = 1$. It is easy to check that a modified argument also works in the cases $n = 3, 6, 7$.

I also remark that the phrasing of the proof of Lemma 3 is not the best. In the subcases when $r = 0$ there are superfluous $+r$ terms in the right hand sides, which is confusing. At the end of cases $2, 3, 4$ the concluding sentence "Hence $p, q = 2$" etc. is also confusing, since the argument actually concludes when we see that n equals one of the excluded values.