

Note on congruent numbers

Marek Wójtowicz

(Instytut Matematyki, Uniwersytet Kazimierza Wielkiego 85-072 Bydgoszcz, Pl. Weysenhoffa 11,
Poland)

E-mail: mwojt@ukw.edu.pl

A positive integer A is said to be a *congruent number* if A is the area of a right triangle with rational sides. One may consider only A square-free.

In 1998, F. R. Nemenzo [3] listed all congruent numbers less than 40 000, and non-congruent numbers were studied by F. Lemmermeyer [2] and W. Cheng and X. Guo [1] among others.

I will present short proof of the following

Theorem 1. *Every positive integer A fulfilling the Diophantine equation*

$$A^2 = x^2 + y^4$$

is a congruent number.

REFERENCES

- [1] W. Cheng, X. Guo. *Some new families of non-congruent numbers*, J. Numb. Theory 196 (2019), 291–305.
- [2] F. Lemmermeyer. *Some families of non-congruent numbers*, Acta Arith. 110 (2003)
- [3] F. R. Nemenzo. *All congruent numbers less than 40000*, Proc. J. Acad. 74 (1998), 29–31.