

Extra exercises

Wim R.M. Cardoen & Brett Milash
University of Utah
Center for High Performance Computing
155 S. 1452 E., Rm 405
Salt Lake City
UT, 84112
USA
`wim.cardoen@utah.edu`
`brett.milash@utah.edu`

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1. Cardano triplets¹

The triplet of integers (a, b, c) where $a, b, c \in \mathbb{N}_0$ bears the name of a **Cardano triplet** if it satisfies the following condition:

$$\sqrt[3]{a + b\sqrt{c}} + \sqrt[3]{a - b\sqrt{c}} = 1$$

- e.g. $(2, 1, 5)$ is a **Cardano triplet**
- there exists 149 **Cardano triplets** for which $a + b + c \leq 1000$
- how many **Cardano triplets** exist for which $a + b + c \leq 5000000$?

¹[Project Euler - Problem 251 \(slimmed down version\)](#)