

# Counting Steiner triple systems of order 21

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The classification of Steiner triple systems (STSs) has proceeded by centuries: the two STS(13)s were known in the 19th century, the 80 STS(15)s in the 20th, and the 11,084,874,829 STS(19)s in the 21st. We might have to wait until the 22nd century to get the STS(21)s classified and stored, but perhaps they could be *counted* even earlier? Computational approaches for counting STSs will here be discussed. These lead to an algorithm that has been used to obtain (in 82 core-years) the number of isomorphism classes of STS(21)s, 14,796,207,517,873,771, as well as the total number of STS(21)s, 755,952,181,048,907,354,964,715,609,522,176,000. The issue of correctness of these numbers is also addressed.