\( s_4 = 53 + 1 \)
\( s_4 = 2 \cdot 27 \)

Abundant.

\( s_4 = 3^3 + 3^3 \), sum of two cubes.

19-gonal number

Leyland number: \( s_4 = 3^3 + 3^3 \)

\( s_4 \) is the sum of three squares in three ways:

\[
\begin{align*}
54 &= 7^2 + 2^2 + (2^2 = 6^2 + 3^2 + 3^2 = 5^2 + 5^2 + 2^2) \\
\text{(Smallest such number)}
\end{align*}
\]

Number of partitions of 19 into distinct parts.

\( 13^{s_4} + 54 \) is prime.

\( \frac{s_4! - 1}{45!} \) is prime.

There are exactly 54 universal quadratic forms (sums of integer multiples of perfect squares that represent all non-zero integers) - Ramanujan & Dickson.

\( s_4 = 1^3 + 5^3 + 5^3 + 2^3 + 3^3 + 6^3 = 0^3 + 3^3 + 3^3 \).

Congruent number.