SOME SMARANDACHE IDENTITIES

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Abstract The purpose of this article is to presents 23 Smarandache Identities (SI) (or Facts) with second, three, four, and five degrees. These SI have been obtained by the help of Maple 8(Programming language, see [1]).

§. Introduction

Smarandache values can be obtained by the flowing function: $S(n) = \min\{m \geq 1 : n \mid m!\}$. For example $S(92) = 23$, $S(2115) = 47$, and $S(37) = 37$. For more details visit [2].

$$SI.1 S(92)^2 + S(2115)^2 = S(37)^2 + S(37)^2$$
$$SI.2 S(68)^2 + S(1155)^2 = S(13)^2 + S(13)^2$$
$$SI.3 S(1020)^2 + S(260099)^2 = S(53)^2 + S(53)^2$$
$$SI.4 S(1336)^2 + S(446223)^2 = S(197)^2 + S(197)^2$$
$$SI.5 S(2068)^2 + S(1069155)^2 = S(37)^2 + S(37)^2$$
$$SI.6 S(1324)^2 + S(438243)^2 = S(5)^2 \times S(13)^3 + S(5)^2 \times S(13)^3$$
$$SI.7 S(240)^2 + S(14399)^2 = S(5) \times S(29)^2$$
$$SI.8 S(900)^2 + S(202499)^2 = S(5)^2 \times S(17)^3 + S(5)^2 \times S(17)^3$$
$$SI.9 S(620)^2 + S(96099)^2 = S(13)^2 \times S(17)^3 + S(13)^2 \times S(17)^3$$
$$SI.10 S(52)^2 + S(675)^2 = S(5)^2 + S(5)^2$$
$$SI.11 S(1428)^2 + S(509795)^2 = S(5)^4 + S(5)^4$$
$$SI.12 S(3)^2 + S(4)^2 = S(5)^2$$
$$SI.13 S(12)^5 + S(4)^5 = S(2)^{11}$$
$$SI.14 S(24)^5 + S(8)^5 = S(2)^{11}$$
$$SI.15 S(96)^5 + S(32)^5 = S(2)^{16}$$
$$SI.16 S(192)^5 + S(64)^5 = S(2)^{16}$$
$$SI.17 S(288)^5 + S(96)^5 = S(2)^{16}$$

$$SI.18 S(13440)^5 + S(40320)^5 = S(2)^{16}$$
$$SI.19 S(20480)^5 + S(61440)^5 = S(2)^{21}$$
$$SI.20 S(28672)^5 + S(86016)^5 = S(2)^{21}$$
$$SI.21 S(1)^3 + S(2)^3 + S(3)^3 = S(9)^2$$
$$SI.22 S(5)^3 + S(4)^3 + S(3)^3 = S(9)^3$$
$$SI.23 S(5)^3 + S(4)^3 + S(6)^3 = S(9)^3$$

References

[1] Maple 7, Programming Guide, M.B. Monagan and others, Waterloo Maple Inc. 2001.

[2] http://www.gallup.unm.edu/ smarandache/.