Supplementary Materials for Solo Project

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This document provides tables showing the maximum N and its distinct representations for $N = 2^a + 3^b + 5^c$ and $N = 2^a + 3^b + 5^c + 7^d$ discussed in the main report. This data was found using the code also included in the supplementary material.

	Max N	Representations
2 reps	5.31×10^5	$(19, 8, 4), (3, 12, 2)$
3 reps	756	$(1, 6, 2), (7, 1, 4), (9, 5, 0)$

Table 1: The maximum $N = 2^a + 3^b + 5^c$, $a, b, c \in \mathbb{Z}$, that can be written using two and three fully distinct representations, (a, b, c). In this case, a new representation is only valid if all the exponents differ. Also included are the distinct representations for each case.

	Max N	Representations
2 reps	2.82×10^8	$(25, 14, 12, 0), (11, 6, 0, 10)$
3 reps	2.39×10^4	$(9, 8, 2, 5), (12, 9, 3, 0), (13, 4, 6, 1)$

Table 2: The maximum $N = 2^a + 3^b + 5^c + 7^d$, $a, b, c, d \in \mathbb{Z}$, that can be written using two and three fully distinct representations, (a, b, c, d). In this instance, a new representation is only valid if all the exponents differ. Also included are the distinct representations for each case.