$HN.2$

$2.HS.2$ $\leq 4.HS.2$	3078000	$1a^+ + 760a^+ + 3344a^+ + 8910a^+ + 9405a^+ + 16929a^+ + 214016a^\pm + 267520a^+ + 270864a^+ + 365750a^+ + 653125a^+ + 1053360a^+$	13

Character Numbers: [1, 4, 6, 9, 11, 13, 18, 19, 20, 22, 24, 29, 33]

	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}	S_{11}	S_{12}	S_{13}
χ_1	1	1	1408	1408	4400	11550	35200	35200	246400	354816	354816	554400	1478400
χ_2	1	−1	352	−352	0	0	4400	−4400	0	22176	−22176	0	0
χ_3	1	1	208	208	−100	1050	2200	2200	−5600	2016	2016	−12600	8400
χ_4	1	1	−112	−112	600	150	1000	1000	−4400	−864	−864	7200	−3600
χ_5	1	1	208	208	200	−1050	1000	1000	2800	2016	2016	0	−8400
χ_6	1	1	128	128	400	750	0	0	3200	−2304	−2304	0	0
χ_7	1	1	−47	−47	−100	0	250	250	700	−504	−504	0	0
χ_8	1	−1	−53	53	0	0	350	−350	0	−504	504	0	0
χ_9	1	1	28	28	−100	150	−50	−50	−200	396	396	900	−1500
χ_{10}	1	−1	72	−72	0	0	100	−100	0	−504	504	0	0
χ_{11}	1	1	−32	−32	80	30	−80	−80	160	576	576	−720	−480
χ_{12}	1	1	16	16	8	−90	−56	−56	−272	−288	−288	0	1008
χ_{13}	1	−1	−8	8	0	0	−100	100	0	216	−216	0	0

Ramanujan Graphs: [2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13], [2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13], [2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13], [2, 3, 4, 7, 8, 9, 10, 11, 12, 13], [2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13], [2, 3, 5, 7, 8, 9, 10, 11, 12, 13], [2, 3, 6, 7, 8, 9, 10, 11, 12, 13], [2, 3, 7, 8, 9, 10, 11, 12, 13], [2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13], [2, 4, 5, 7, 8, 9, 10, 11, 12, 13], [2, 4, 6, 7, 8, 9, 10, 11, 12, 13], [2, 4, 7, 8, 9, 10, 11, 12, 13], [2, 5, 6, 7, 8, 9, 10, 11, 12, 13], [2, 5, 7, 8, 9, 10, 11, 12, 13], [2, 6, 7, 8, 9, 10, 11, 12, 13] , [2, 7, 8, 9, 10, 11, 12, 13], [3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13], [3, 4, 5, 7, 8, 9, 10, 11, 12, 13], [3, 4, 6, 7, 8, 9, 10, 11, 12, 13], [3, 4, 7, 8, 9, 10, 11, 12, 13], [3, 5, 6, 7, 8, 9, 10, 11, 12, 13], [3, 5, 7, 8, 9, 10, 11, 12, 13], [3, 6, 7, 8, 9, 10, 11, 12, 13] , [3, 7, 8, 9, 10, 11, 12, 13], [4, 5, 6, 7, 8, 9, 10, 11, 12, 13], [4, 5, 7, 8, 9, 10, 11, 12, 13], [4, 6, 7, 8, 9, 10, 11, 12, 13] , [4, 7, 8, 9, 10, 11, 12, 13], [5, 6, 7, 8, 9, 10, 11, 12, 13], [5, 7, 8, 9, 10, 11, 12, 13], [6, 7, 8, 9, 10, 11, 12, 13], [7, 8, 9, 10, 11, 12, 13]