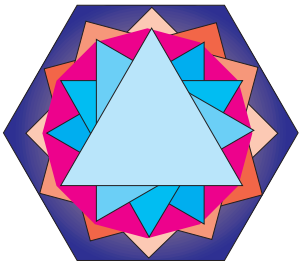

The Dozenal Society of Great Britain

Primes in base twelve

List 1: primes under *600 (omitting 2 and 3)

	5	7	ᘔ
11	15	17	1ᘔ
	25	27	
31	35	37	3ᘔ
	45		4ᘔ
51		57	5ᘔ
61		67	6ᘔ
	75		
81	85	87	8ᘔ
91	95		
		ᘓ7	ᘓᘔ
	ᘔ5	ᘔ7	
	105	107	
111		117	11ᘔ
	125		12ᘔ
131			13ᘔ
141	145	147	
		157	
		167	16ᘔ
171	175		17ᘔ
181			18ᘔ
	195		19ᘔ
	1ᘓ5	1ᘓ7	
1ᘔ1	1ᘔ5	1ᘔ7	
	205		
		217	21ᘔ
221	225		
		237	
241			24ᘔ
251	255		25ᘔ
		267	
271		277	27ᘔ
	285		
291	295		
2ᘓ1			2ᘓᘔ
2ᘔ1			2ᘔᘔ

301		307	30Ɛ
	315		
321	325	327	32Ɛ
			33Ɛ
		347	34Ɛ
		357	35Ɛ
	365		
	375	377	
391		397	
	3Ƨ5		3ƧƐ
	3Ɛ5	3Ɛ7	
401			40Ɛ
	415		41Ɛ
421		427	
431	435	437	
		447	
	455	457	45Ɛ
	465		46Ɛ
471			
481	485		48Ɛ
		497	
	4Ƨ5		
4Ɛ1			4ƐƐ
		507	
511		517	51Ɛ
		527	
531	535		
541	545		
		557	
	565		
	575	577	
	585	587	58Ɛ
591			59Ɛ
5Ɛ1	5Ɛ5	5Ɛ7	5ƐƐ

Prime numbers above 3 are confined, in dozenal notation, to the four possible endings 1, 5, 7 and Ɛ). They are thus of the form 10n±1 and 10n±5.
These four cases are variants of the forms 4n±1 and 6n±1, the latter of which have been described in another leaflet.
The Manual of the Dozen System (DSA) points out that each of the four dozenal classifications has its own special characteristics. As an illustration, consider the prime number 7, which is of the form 10n-5. If we divide 1 by 7 we get as a reciprocal a circulating dozenal of 6 figures [186Ƨ35]. The number of figures in such reciprocals is at most one less than the prime (p-1), or it is a factor of (p-1). But all of the primes whose reciprocals extend to the full period (p-1) occur in the groups 10n±5. The 10n formulæ refine the 4n formulæ by eliminating numbers ending in 3 or 9 as composites, although they number one-third of the possible 4n cases. This is a good illustration of the special refinements which dozenals offer in number analysis.