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Computing a pick-5 wheel's chances using its Spectrum

L.1 Steiner Design $S(3,5,17)$ and Chances of winning

We use Table 14.2, which is the spectrum of $S(3, 5, 17)$, in Chapter 14 to find the chances of the wheel for various wins in a given Pick-5 lotto. But first we need to find the chances of the various Hits, namely 'Hits = 3', 'Hits = 4', and 'Hits = 5', where 'Hits' denotes the number of winning numbers among the wheel's 17 numbers. Chances for the various Hits values are given in Table L.1.

Number of winning among wheel's 17 numbers	Chance (expressed as '1 in')		
	Euromillions 50 numbers in Field 1	Powerball 69 numbers in Field 1	Megamillions 70 numbers in Field 1
3	5.9	12.46	12.9
4	26.98	90.81	95.95
5	342.39819	1816.178571	1955.884615

Table L.1. Chance of a specific number of winning numbers to appear in a specific set of 17 numbers

Let us consider the Powerball lottery (USA as of 2019) with five numbers drawn from Field 1 comprising 69 numbers. Then we see from Ap-