

# The number of prime factors

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Let us investigate the number of prime factors of integers.

Figure ?? shows the number of prime factors for each integer less than 100.

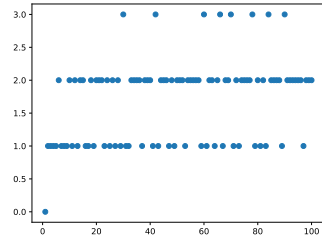


Figure 1: The number of prime factors of each integer

Table ?? shows these counts for  $95 \leq n \leq 100$ .

N	Number of factors
95	2
96	2
97	1
98	2
99	2
100	2

The number with the most prime factors has 3 prime factors.

The number of factors is probably related to the number of primes which has a lower bound given by:

$$\pi(n) = \frac{n}{\log n} = \frac{1}{n-1} + \frac{13}{12} - \frac{1}{24} (n-1)^2 + \frac{11}{720} (n-1)^3 - \frac{11}{1440} (n-1)^4 + \frac{271}{60480} (n-1)^5 + \frac{5n}{12} + \mathcal{O}((n-1)^6; n \rightarrow 1)$$