

Number of species and number of possible trees

| # species (n) | # unrooted trees | $\prod_{i=3}^n (2i-5)$ | # rooted trees | $\left(\prod_{i=3}^n (2i-5) \right) \cdot (2n-3)$ |
|---------------|------------------|------------------------|----------------|--|
| 2 | 1 | | 1 | |
| 3 | 1 | | 3 | |
| 4 | 3 | | 15 | |
| 5 | 15 | | 105 | |
| 6 | 105 | | 954 | |
| 7 | 954 | | 10,395 | |
| 8 | 10,395 | | 135,135 | |
| 9 | 135,135 | | 2,027,025 | |
| 10 | 2,027,025 | | 34,459,425 | |