```
Expand[(Sum[t^k, {k, 6}])^10]
```

$t^{10} + 10\,t^{11} + 55\,t^{12} + 220\,t^{13} + 715\,t^{14} + 2002\,t^{15} + 4995\,t^{16} + 11\,340\,t^{17} + 23\,760\,t^{18} +$
$46\,420\,t^{19} + 85\,228\,t^{20} + 147\,940\,t^{21} + 243\,925\,t^{22} + 383\,470\,t^{23} + 576\,565\,t^{24} + 831\,204\,t^{25} +$
$1\,151\,370\,t^{26} + 1\,535\,040\,t^{27} + 1\,972\,630\,t^{28} + 2\,446\,300\,t^{29} + 2\,930\,455\,t^{30} + 3\,393\,610\,t^{31} +$
$3\,801\,535\,t^{32} + 4\,121\,260\,t^{33} + 4\,325\,310\,t^{34} + 4\,395\,456\,t^{35} + 4\,325\,310\,t^{36} + 4\,121\,260\,t^{37} +$
$3\,801\,535\,t^{38} + 3\,393\,610\,t^{39} + 2\,930\,455\,t^{40} + 2\,446\,300\,t^{41} + 1\,972\,630\,t^{42} + 1\,535\,040\,t^{43} +$
$1\,151\,370\,t^{44} + 831\,204\,t^{45} + 576\,565\,t^{46} + 383\,470\,t^{47} + 243\,925\,t^{48} + 147\,940\,t^{49} + 85\,228\,t^{50} +$
$46\,420\,t^{51} + 23\,760\,t^{52} + 11\,340\,t^{53} + 4995\,t^{54} + 2002\,t^{55} + 715\,t^{56} + 220\,t^{57} + 55\,t^{58} + 10\,t^{59} + t^{60}$

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$$\mathbb{P}(X = 35) = \frac{4395456}{60466176} \approx 7.27\%.$$

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$$\mathbb{P}(X = 58) = \frac{55}{60466176} \approx 9 \times 10^{-7}.$$

- etc.