

$$\begin{aligned} &> p := \text{add}(\text{binomial}(4,k)^2 * k! * x^k, k = 0..4); \\ & \quad p := 24x^4 + 96x^3 + 72x^2 + 16x + 1 \end{aligned} \quad (1)$$

$$\begin{aligned} &> r := \text{expand}(p ^ 13); \\ r := & 876488338465357824x^{52} + 45577393600198606848x^{51} + 1128040491604915519488x^{50} \end{aligned} \quad (2)$$

$$\begin{aligned} &+ 17691624949143759224832x^{49} + 197510109930977331511296x^{48} \\ &+ 1671801585952084998488064x^{47} + 11160044514841364048904192x^{46} \\ &+ 60349919423314312550154240x^{45} + 269536240818933486512504832x^{44} \\ &+ 1008829460845176117163720704x^{43} + 3200508341076271076179181568x^{42} \\ &+ 8685452212593567389102112768x^{41} + 20314896422012315375385968640x^{40} \\ &+ 41214531997403741694399086592x^{39} + 72925355758796236529483120640x^{38} \\ &+ 113078073865975333400686362624x^{37} + 154308224898784201844862222336x^{36} \\ &+ 186016114662793760931122774016x^{35} + 198761291157362514223920316416x^{34} \\ &+ 188820916758223736558378287104x^{33} + 159913383565757439686505136128x^{32} \\ &+ 121028385182593948745868509184x^{31} + 82032877163176103200828686336x^{30} \\ &+ 49888716764060350279204208640x^{29} + 27266846764215411046147424256x^{28} \\ &+ 13411658611783123462206259200x^{27} + 5943418300909605336033263616x^{26} \\ &+ 2375107083460873825743273984x^{25} + 856457318848268962838347776x^{24} \\ &+ 278792442466454053784125440x^{23} + 81936653202101883358937088x^{22} \\ &+ 21739757533915099252654080x^{21} + 5205350659089153382318080x^{20} \\ &+ 1124030206367503712649216x^{19} + 218683644405946996064256x^{18} \\ &+ 38281822498322914148352x^{17} + 6019588771736064405504x^{16} \\ &+ 848414962333166272512x^{15} + 106897204313740099584x^{14} \\ &+ 12001392087581949952x^{13} + 1195874963294123008x^{12} + 105252850794983424x^{11} \\ &+ 8134161165644800x^{10} + 547978858645504x^9 + 31889733303168x^8 \\ &+ 1584864353280x^7 + 66274500864x^6 + 2286355968x^5 + 63317176x^4 + 1352416x^3 \\ &+ 20904x^2 + 208x + 1 \end{aligned}$$

$$\begin{aligned} &> n := \text{add}((-1)^k * (52 - k)! * \text{coeff}(r,x,k), k=0..52); \\ n := & 1309302175551177162931045000259922525308763433362019257020678406144 \end{aligned} \quad (3)$$

$$\begin{aligned} &> \text{evalf}(n); \\ & \quad 1.309302176 \cdot 10^{66} \end{aligned} \quad (4)$$

$$\begin{aligned} &> \text{evalf}(n/52!); \\ & \quad 0.01623272747 \end{aligned} \quad (5)$$