

Transitive Groups of Degree 6

No	Group	Order	2-Index	Molien Series
1	"C6 = 6 = 3[x]2"	6	$1 + t + 3t^2 + 4t^3 + 3t^4 + t^5 + t^6$	$1 + t + 4t^2 + 10t^3 + 22t^4 + 42t^5 + 80t^6 + 132t^7 + 217t^8 + 335t^9 + 504t^{10}$
2	"D_66 = [3]2"	6	$1 + t + 4t^2 + 4t^3 + 4t^4 + t^5 + t^6$	$1 + t + 5t^2 + 10t^3 + 24t^4 + 42t^5 + 83t^6 + 132t^7 + 222t^8 + 335t^9 + 511t^{10}$
3	"D6 = S3[x]2"	12	$1 + t + 3t^2 + 3t^3 + 3t^4 + t^5 + t^6$	$1 + t + 4t^2 + 7t^3 + 16t^4 + 26t^5 + 50t^6 + 76t^7 + 126t^8 + 185t^9 + 280t^{10}$
4	"A_46 = [2^2]3"	12	$1 + t + 2t^2 + 4t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 8t^3 + 14t^4 + 26t^5 + 48t^6 + 76t^7 + 121t^8 + 187t^9 + 273t^{10}$
5	"F_186 = [3^2]2 = 3 wr 2"	18	$1 + t + 2t^2 + 2t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 6t^3 + 12t^4 + 20t^5 + 37t^6 + 56t^7 + 90t^8 + 133t^9 + 197t^{10}$
6	"2A_46 = [2^3]3 = 2 wr 3"	24	$1 + t + 2t^2 + 3t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 7t^3 + 13t^4 + 23t^5 + 41t^6 + 63t^7 + 98t^8 + 146t^9 + 210t^{10}$
7	"S_46d = [2^2]S3"	24	$1 + t + 2t^2 + 3t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 6t^3 + 11t^4 + 18t^5 + 32t^6 + 48t^7 + 75t^8 + 111t^9 + 160t^{10}$
8	"S_46c = 1/2[2^3]S3"	24	$1 + t + 2t^2 + 2t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 5t^3 + 10t^4 + 15t^5 + 29t^6 + 41t^7 + 68t^8$

				$t^8 + 98t^9 + 147t^{10}$
9	"F_186:2 = [1/2S3^2]2"	36	$1 + t + 2t^2 + 2t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 5t^3 + 10t^4 + 15t^5 + 27t^6 + 38t^7 + 60t^8 + 84t^9 + 123t^{10}$
10	"F_366 = 1/2[S3^2]2"	36	$1 + t + 2t^2 + 2t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 5t^3 + 10t^4 + 15t^5 + 26t^6 + 38t^7 + 59t^8 + 84t^9 + 121t^{10}$
11	"2S_46 = [2^3]S3 = 2 wr S3"	48	$1 + t + 2t^2 + 2t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 5t^3 + 10t^4 + 15t^5 + 27t^6 + 38t^7 + 60t^8 + 84t^9 + 122t^{10}$
12	"L6 = PSL2,5 = A_56"	60	$1 + t + t^2 + 2t^3 + t^4 + t^5 + t^6$	$1 + t + 2t^2 + 4t^3 + 6t^4 + 10t^5 + 17t^6 + 24t^7 + 36t^8 + 53t^9 + 74t^{10}$
13	"F_366:2 = [S3^2]2 = S3 wr 2"	72	$1 + t + 2t^2 + 2t^3 + 2t^4 + t^5 + t^6$	$1 + t + 3t^2 + 5t^3 + 10t^4 + 15t^5 + 26t^6 + 37t^7 + 57t^8 + 79t^9 + 113t^{10}$
14	"L6:2 = PGL2,5 = S_56"	120	$1 + t + t^2 + t^3 + t^4 + t^5 + t^6$	$1 + t + 2t^2 + 3t^3 + 5t^4 + 7t^5 + 12t^6 + 15t^7 + 23t^8 + 31t^9 + 44t^{10}$
15	"A6"	360	$1 + t + t^2 + t^3 + t^4 + t^5 + t^6$	$1 + t + 2t^2 + 3t^3 + 5t^4 + 7t^5 + 11t^6 + 14t^7 + 20t^8 + 26t^9 + 35t^{10}$
16	"S6"	720	$1 + t + t^2 + t^3 + t^4 + t^5 + t^6$	$1 + t + 2t^2 + 3t^3 + 5t^4 + 7t^5 + 11t^6 + 14t^7 + 20t^8 + 26t^9 + 35t^{10}$