

Group Actions

$$f: G \times S \rightarrow S, f(g, s) = g * s (=gs)$$

G	S	$f: G \times S \rightarrow S$	x	$St(H) = G_x$	$O(H) = G_x$	S/G	S^G
S_n	I_n	$\sigma * i := \sigma(i)$	1	S_{n-1}	I_n	$\{*\}$	\emptyset
$SO(3)$	\mathbb{R}^3	$A * v = Av$	$\begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}$	$SO(2)$	S^2	$\mathbb{R}_{\geq 0}$	$\{0\}$
$SL(2, \mathbb{R})$	\mathbb{H}	$A * z = \frac{az+b}{cz+d}$	i	$SO(2)$	\mathbb{H}	$\{*\}$	\emptyset
G	G	$g * h = gh$	h	$\{e\}$	G	$\{*\}$	\emptyset
$K(< G)$	G/H	$k * gH = kgH$					
G	G	$g * h = g h g^{-1}$					