# RIGID MOTIONS IN THE PLANE

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A rigid motion is a map $m : \mathbb{R}^n \to \mathbb{R}^n$, satisfying the following condition: If x,y are points of $\mathbb{R}^n$, then the distance from x to y is equal to the distance from m(x) to m(y). This talk will be restricted to figures in the plane. It will be shown that the composition of two rigid motions is also a rigid motion, and that the inverse of a rigid motion is a rigid motion. Therefore the rigid motions of $\mathbb{R}^2$ form a group $M_2$, with compositions of operations as its law of composition.