

## **Dynamics and lattice point counting**

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For nice large shape in the plane one expects the number of integer points (or more general lattice points) inside it to be well approximated by the area, and in many cases this can be proved via a simple geometric argument. In some cases, it is possible to give a dynamical proof of this result, and often the dynamical approach gives a better estimate and can also handle situation where the geometric argument fails. In this course I will introduce the general idea of using dynamics to count lattice point in the plane as well as in other homogenous spaces, and illustrate it in several examples.