The Mathematics of Symmetry

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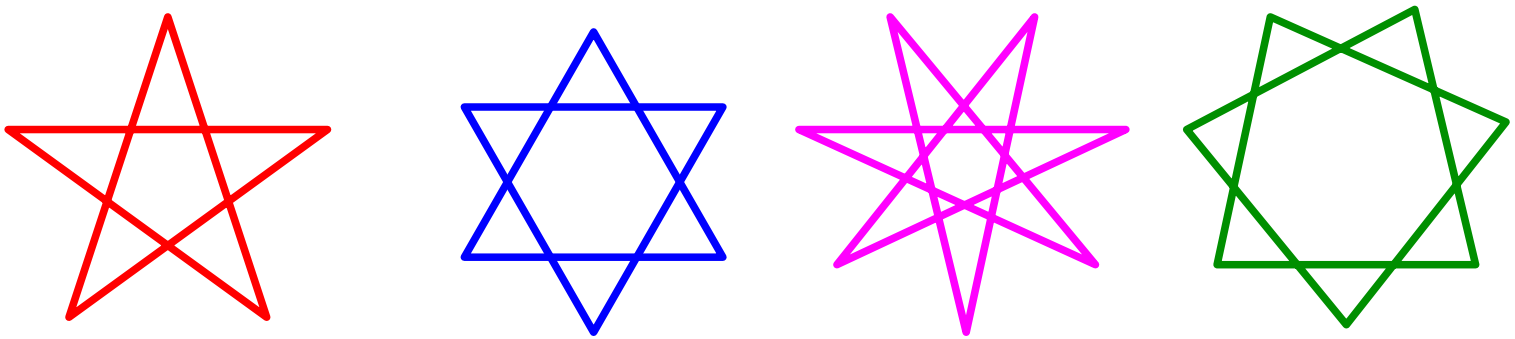

Rotational Symmetry

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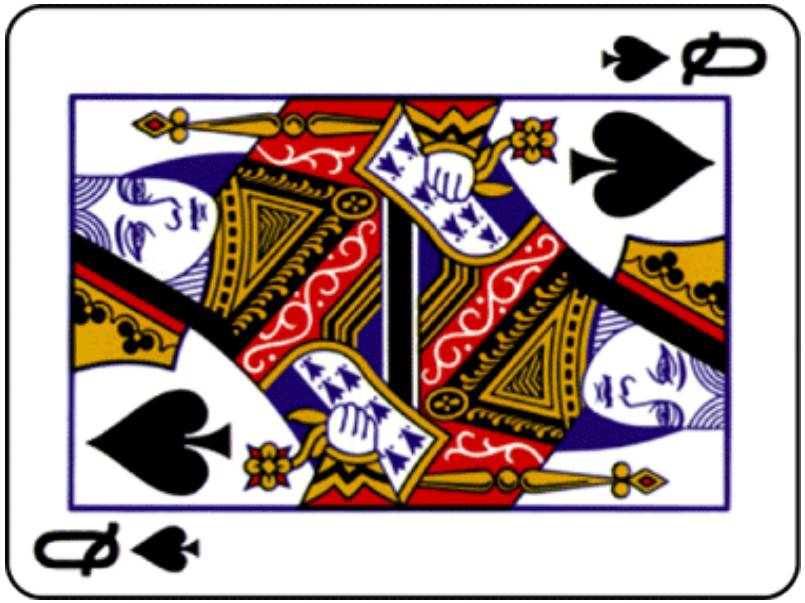

Rotational Symmetry

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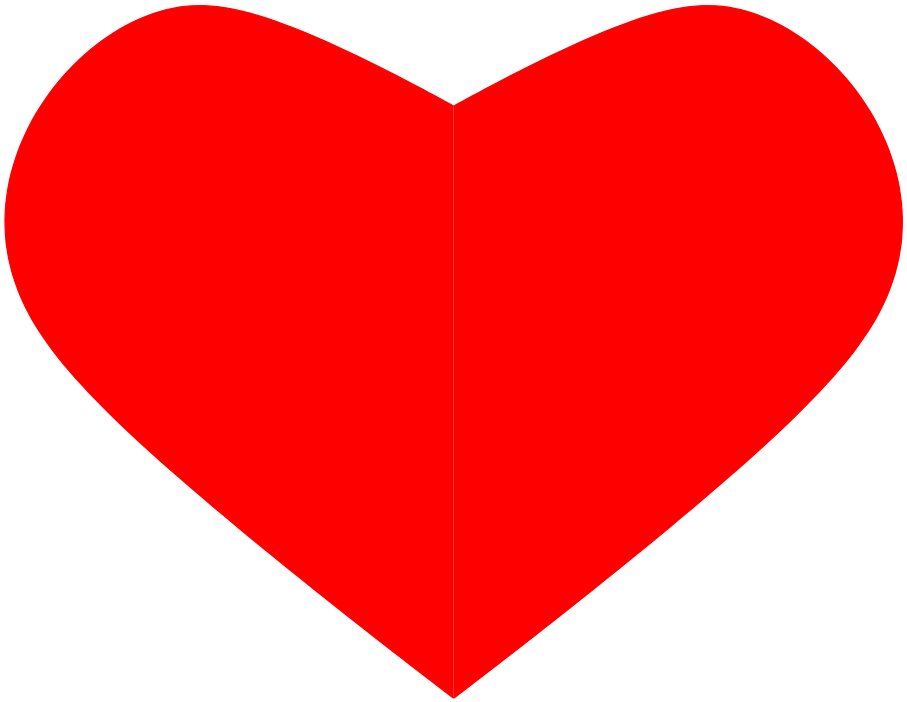
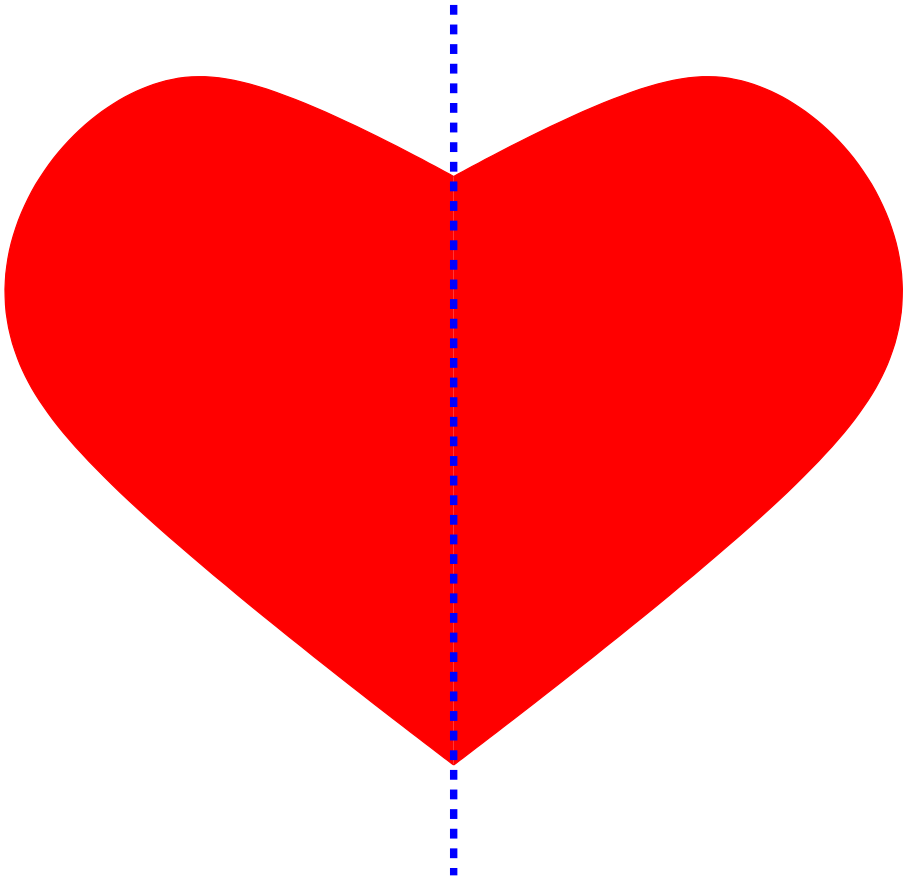
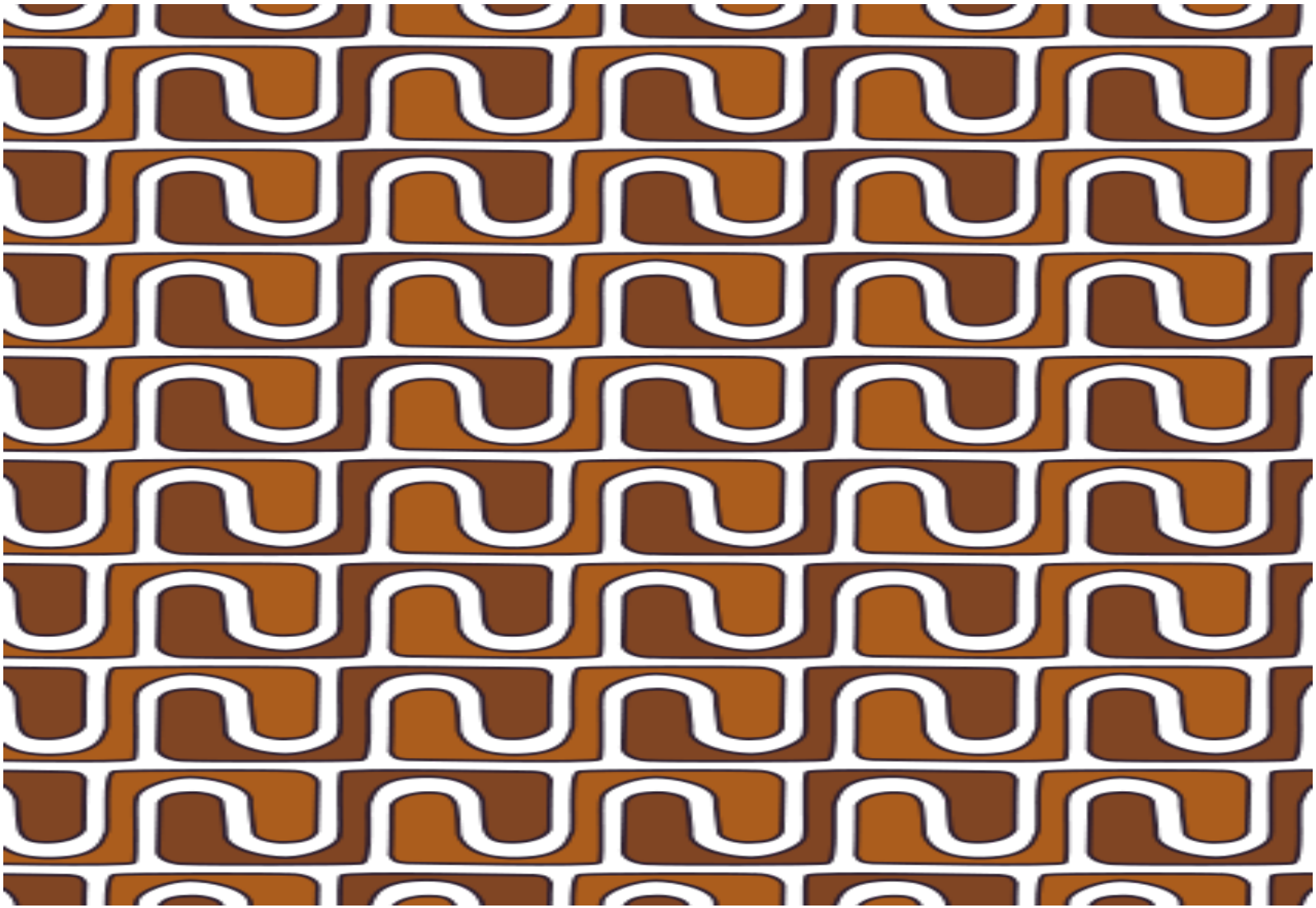
Reflection Symmetry



Reflection Symmetry



Translation Symmetry



Glide Reflection Symmetry

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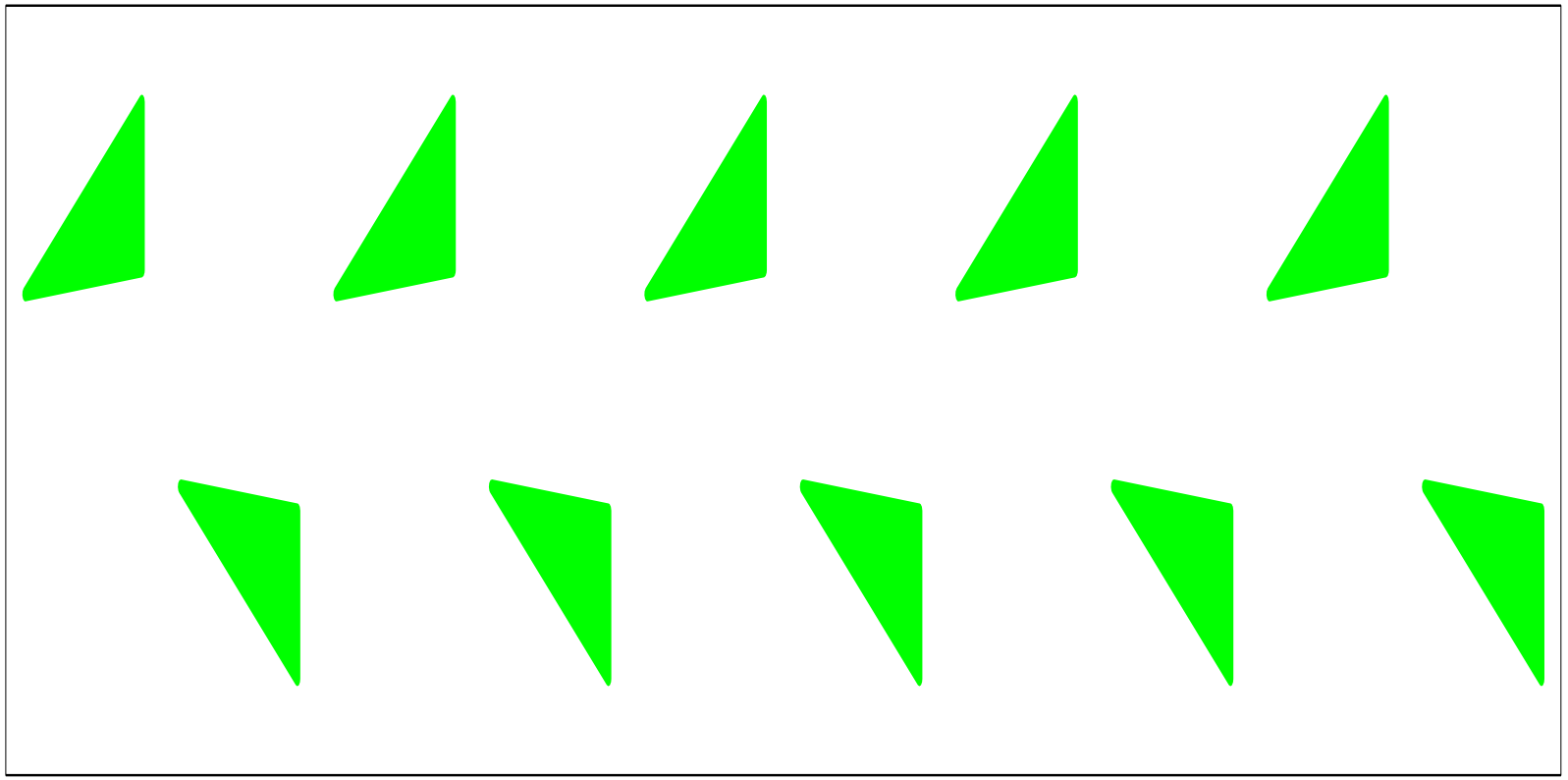
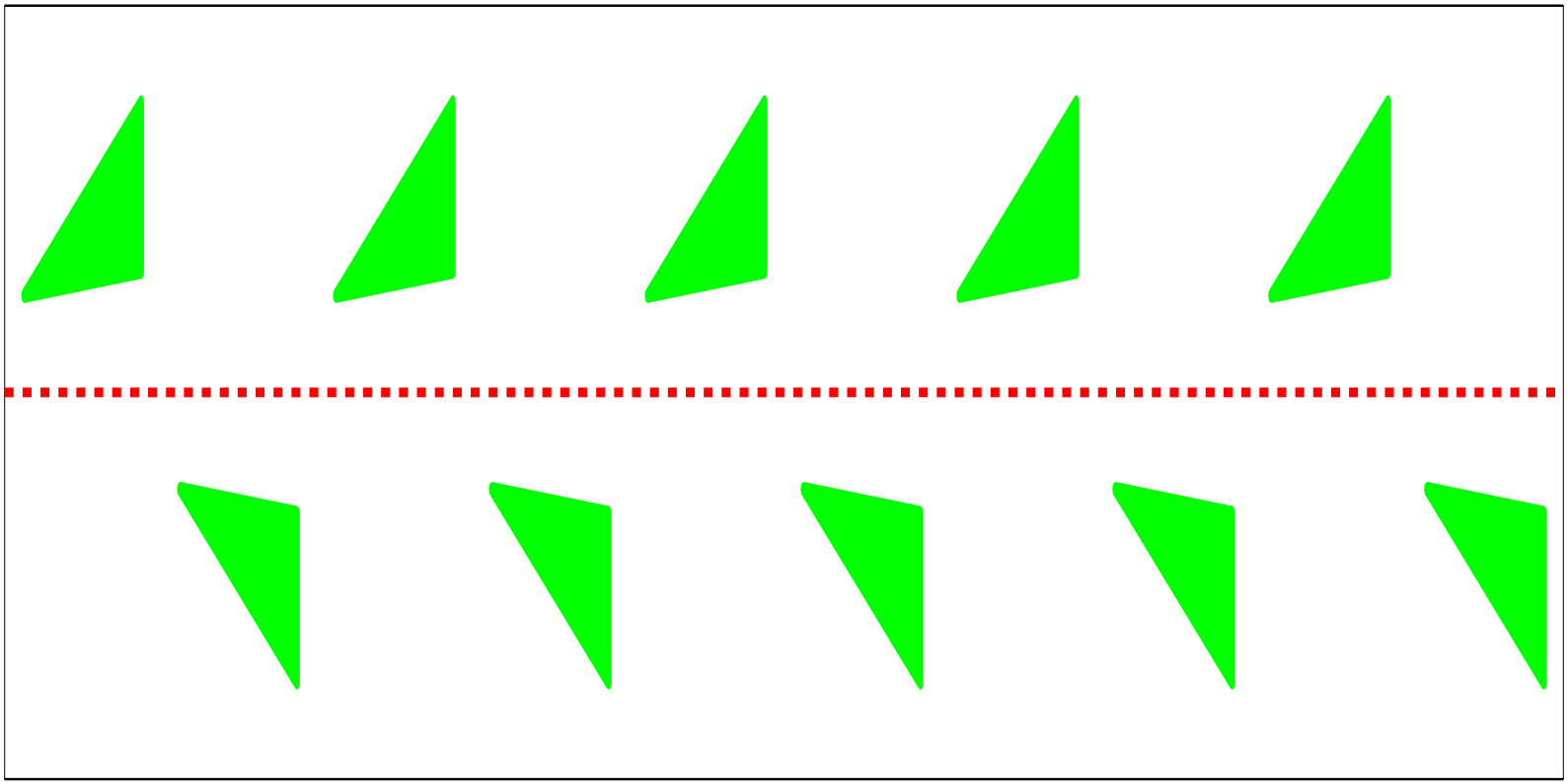


Glide Reflection Symmetry



Symmetries of Three-Dimensional Objects

Cubes?

Tetrahedra?

Octahedra?

Spheres?

Donuts?

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- How do we describe the idea of symmetry mathematically?

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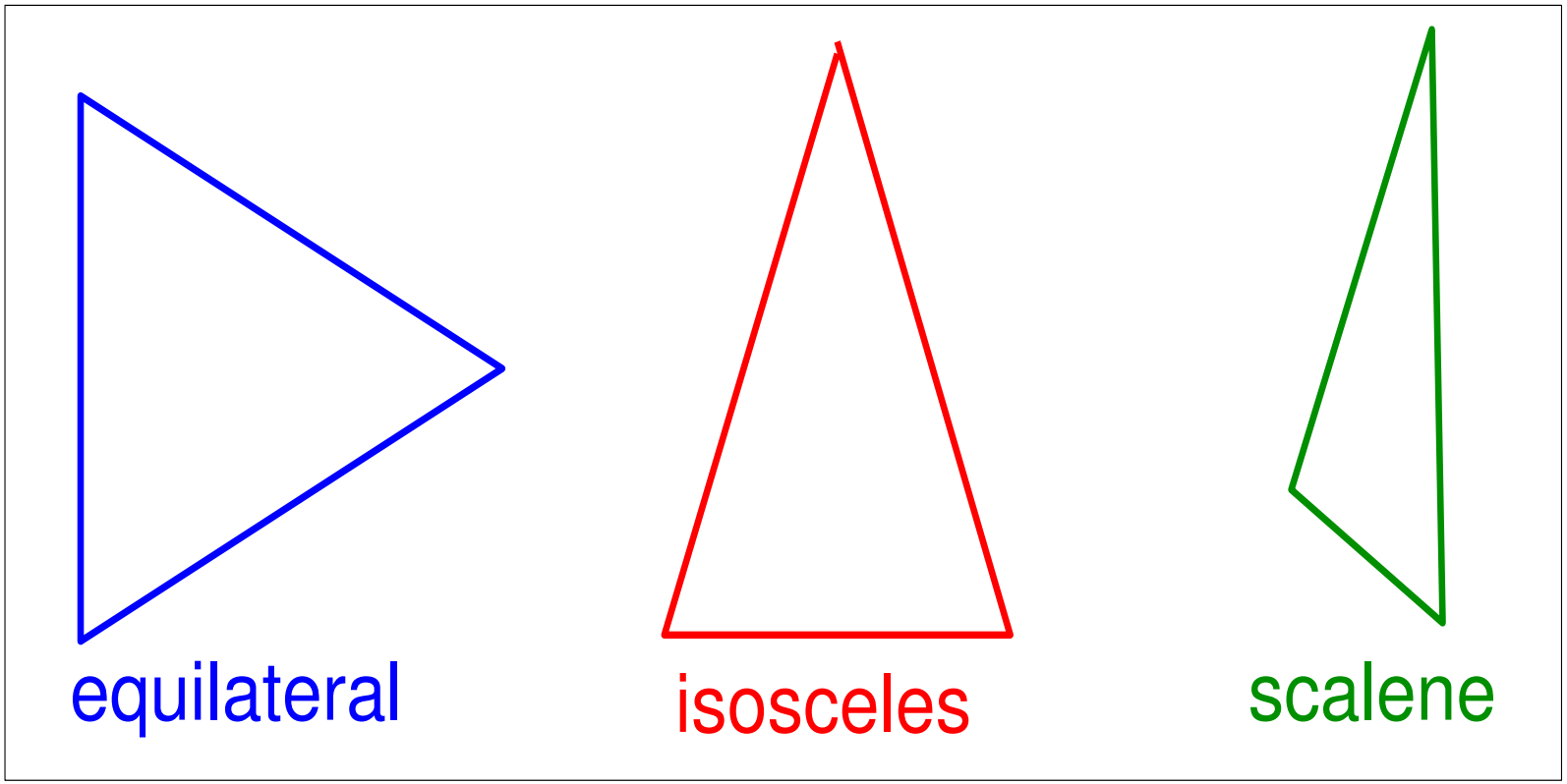
- How do we determine "how symmetric" a particular object is?
- What different kinds of symmetries are out there?

Defining Symmetry

Which of these triangles is the most symmetric?



Why? ★