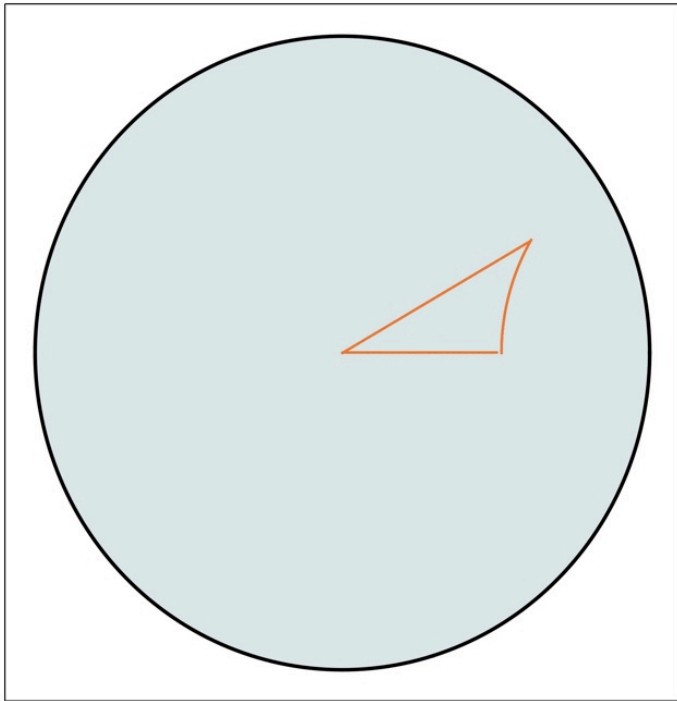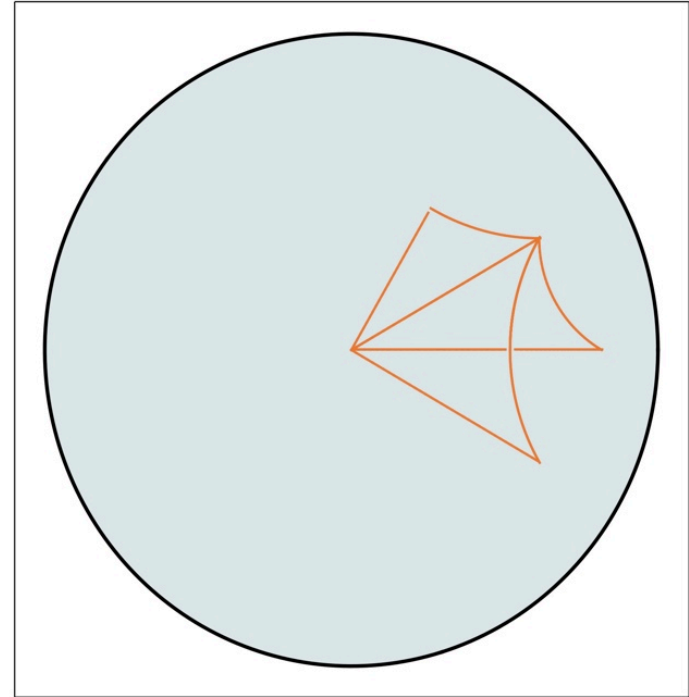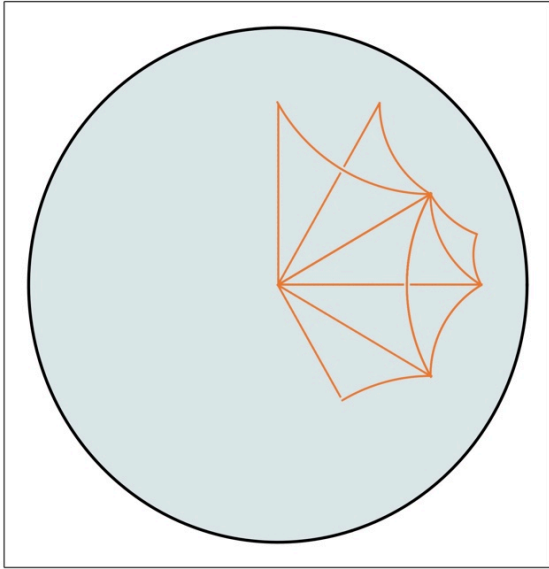# Tessellating the hyperbolic plane
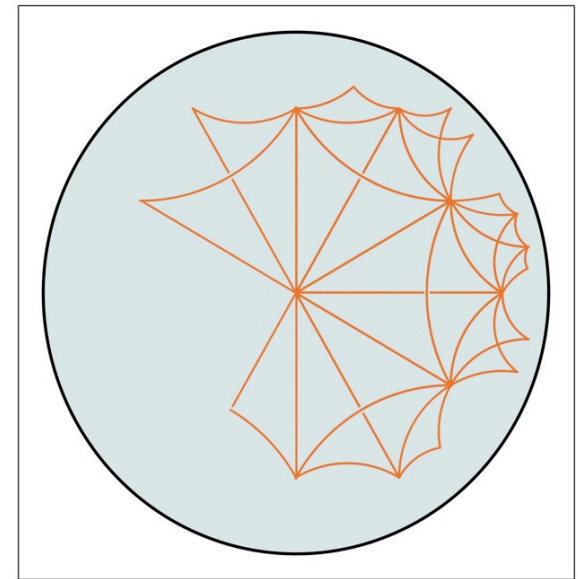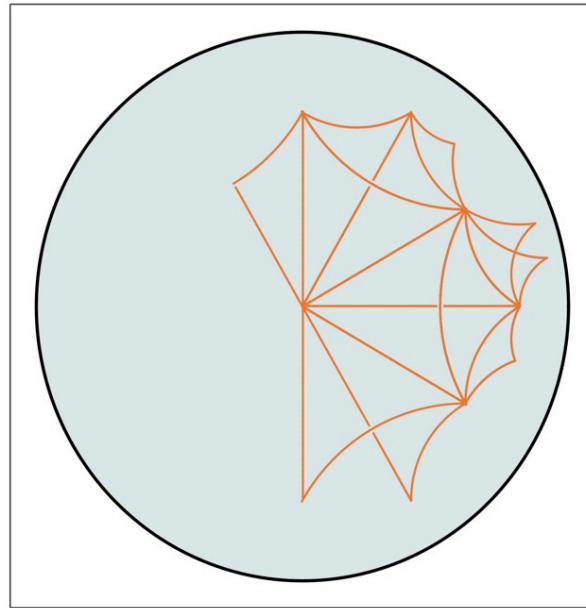
A 30-30-90 degree Triangle

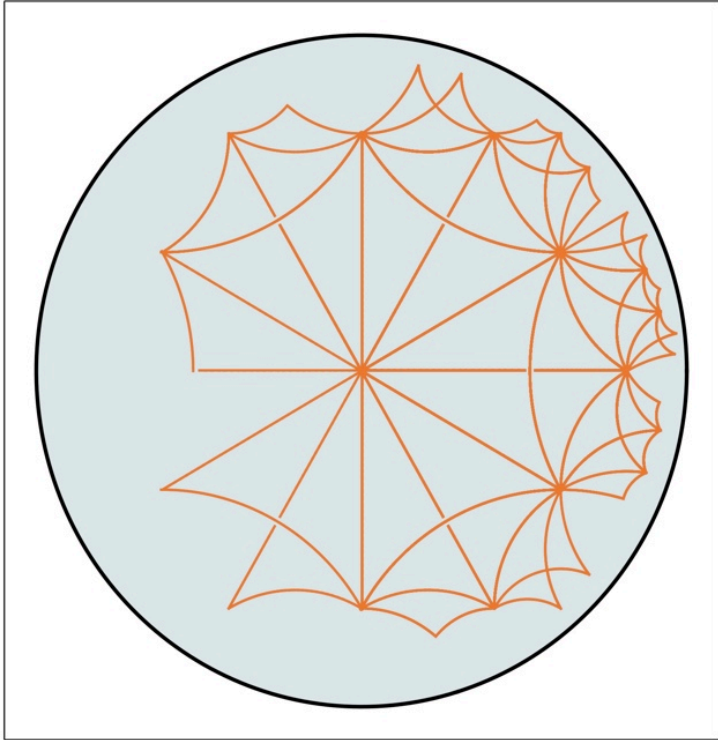reflect over the edges

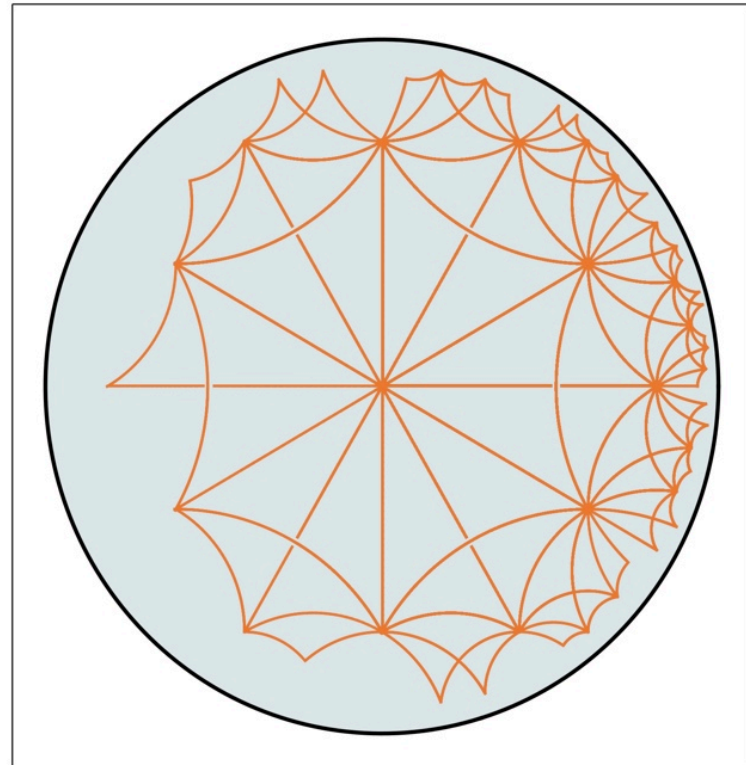# Tessellating the hyperbolic plane

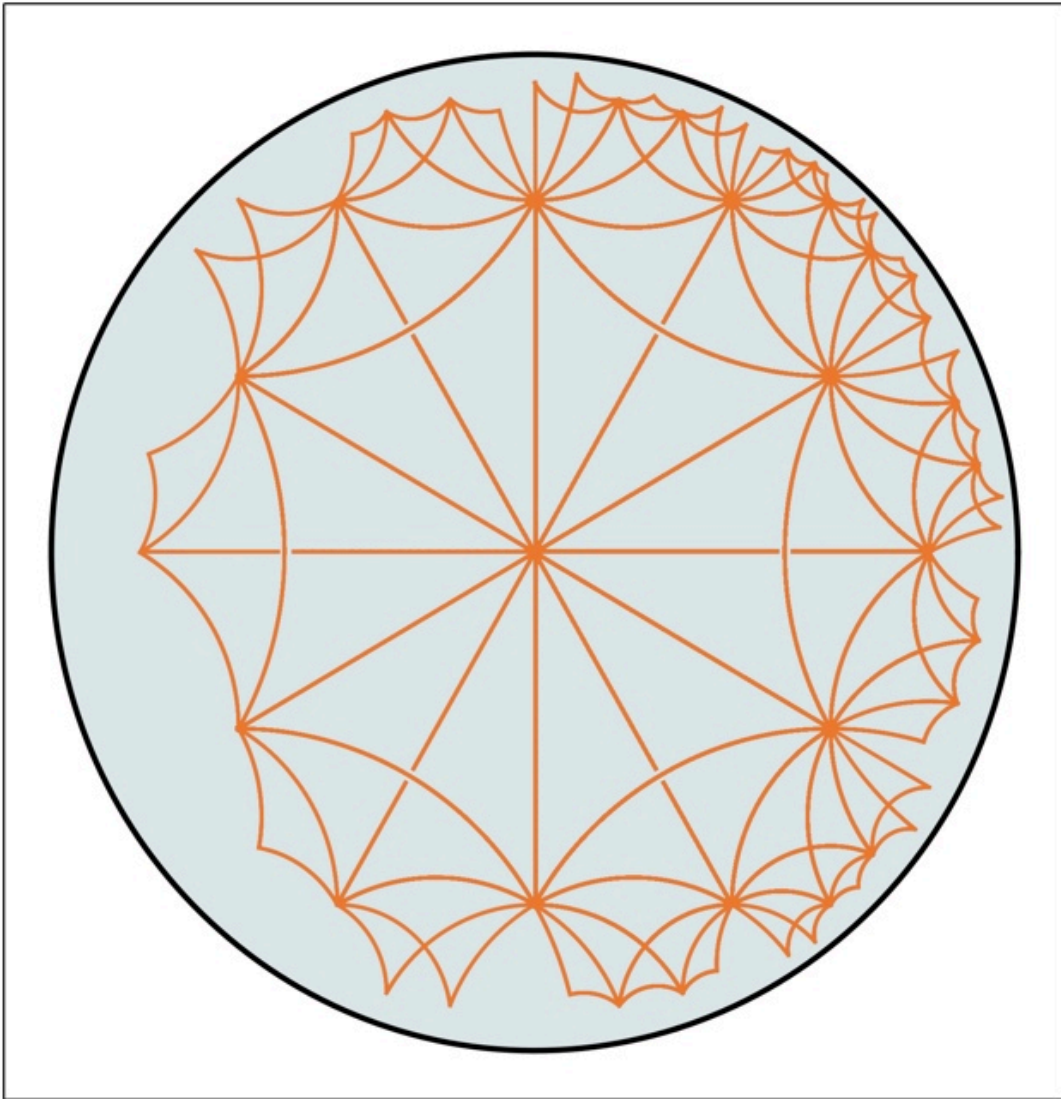Keep on Reflecting over edges

Tessellating the hyperbolic plane

Reflect some more

Tessellating the hyperbolic plane

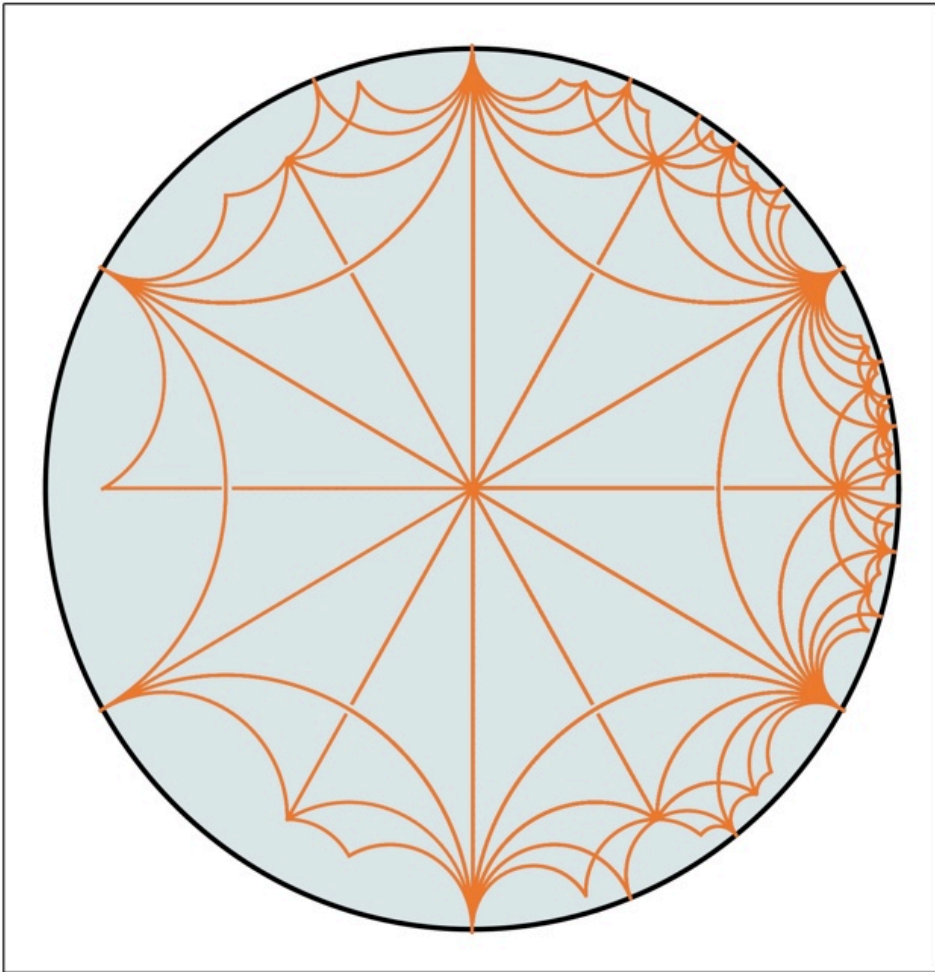IF YOU DO IT FOREVER, YOU'LL TILE THE HYPERBOLIC PLANE
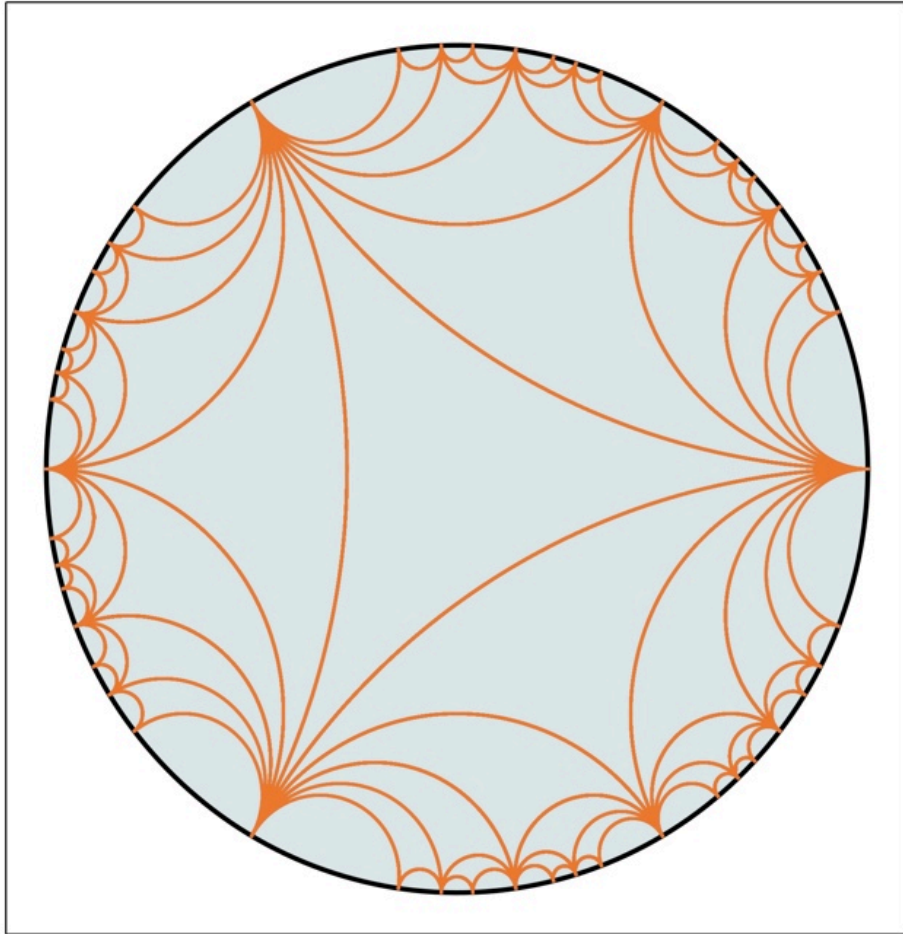
Tessellating the hyperbolic plane

A (portion of a) tiling by a 0-30-90 degree triangle

You can also do it with a right triangle having two ideal vertices
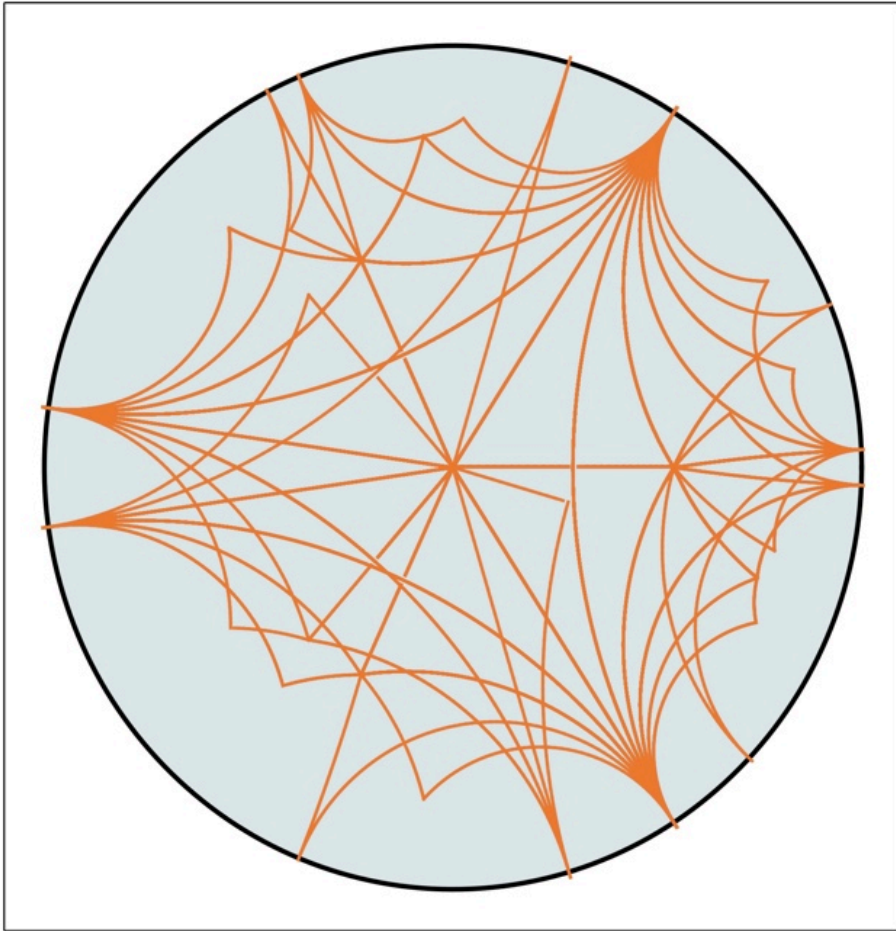
Tessellating the hyperbolic plane

...And with three ideal vertices!

A (portion of a) tiling by an ideal triangle

Tessellating the hyperbolic plane

...but not ALL triangles Tessellate!

Q: What conditions on a triangle guarantee that it will tessellate?