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Section:

18. Teaching and Popularization of Mathematics

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A picture for Real Arithmetic

By mapping the real line plus ∞ onto a circle, drawing the line through 0 and ∞, and the line tangent to ∞, one can use geometric means, namely a straightedge, to determine the product and sum of 2 numbers.
This is an example of a very general result where a conic and a line determine a group for the points on the conic that aren't on the line, and this group is isomorphic to
1)real number arithmetic when the line intersects the conic in 2 points.
2)real number addition when the line intersects the conic in 1 point.
3)complex number multiplication on the unit circle when the line intersects the conic in no points.