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The impact of the discovery of non-Archimedean fields on fundamental aspects of the Parallel Postulate

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If the world were Archimedean, then statements such as the Euclidean parallel postulate, the existence of rectangles, the fact that perpendiculars to the sides of a right triangle intersect, would all be equivalent. Aristotle's axiom, that the distances between two legs of an angle grow without bounds, would be simply true in all models of absolute geometry if the Archimedean axiom were to hold. We will take a look at a whole new world which opens only in the absence of the Archimedean axiom, the world of the creatures that lie beneath the surface of the ocean that is Euclidean geometry and the ocean floor that is absolute geometry.

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