Comparison of the synthetic and analytic approaches to geometry

APPROACH	SYNTHETIC	ANALYTIC
ORIGINS	Greek mathematics	Mainly from 17th century mathematics
BASIC MATHEMATICAL OBJECTS	Abstract sets of points plus other undefined data (like lines, which are undefined sets of points)	Points are ordered pairs or triples of real numbers, other data given by definitions
BASIC ASSUMPTIONS ON THESE OBJECTS	Various axioms or postulates (the two words are synonymous in modern mathematics)	Axioms of the real number system, results from linear algebra, trigonometry and eventually calculus
RELATION TO THE OTHER APPROACH	Need to prove that an abstract system as above "looks like" the analytically defined objects	Need to prove that the system as defined above actually satisfies the synthetic axioms