

$$AE : EB = DF : FC = AD : BC,$$

then the direction of the line EF shall bisect the angle between the directions of BC, AD.

This extension of Euclid's VI. 3 follows immediately from the proposition that if $AE : EB = DF : FC$, then all such lines as EF are parallel to one plane, namely, the plane parallel to BC, AD; and that they each cut similar lines drawn with reference to BC, AD.

Dr Mackay has kindly supplied to me the following references bearing on the subject :—Legendre's *Geometry*, Book V., Prop. 16, (Brewster's Edition, 1824, p. 119; Hutton's *Course of Mathematics*, 12th edition, 1843, Vol. II., p. 224; *The Mathematician*, Vol. III., Supplementary Number, pp. 36–38.

Note on a possible definition of a plane.

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