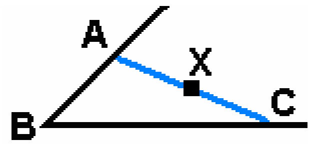
FIGURES FOR SOLUTIONS TO SELECTED EXERCISES

II.1 : Vector algebra and Euclidean geometry

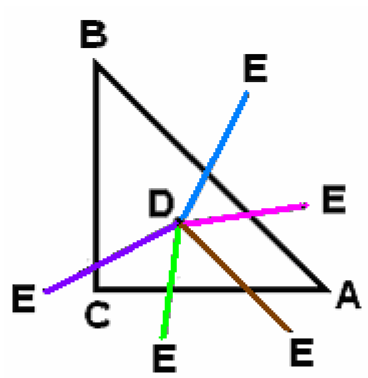
II.3 : Measurement axioms

II.3.6.



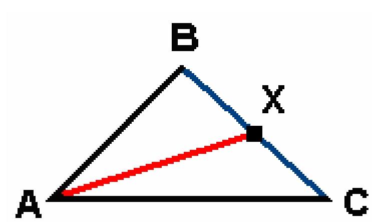
The objective is to prove that the point **X** lies in the interior of the angle**.**

II.3.7.



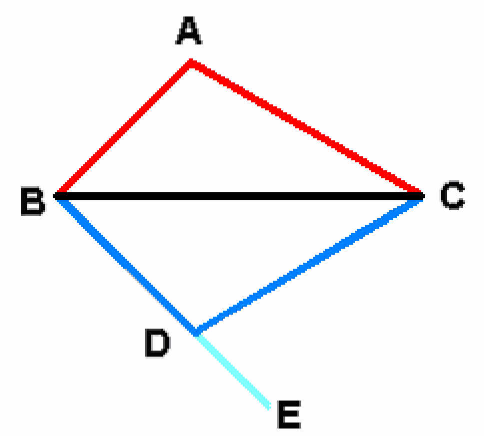
It appears that the open ray **(DE** always meets the triangle at exactly one point**.**

II.3.8.



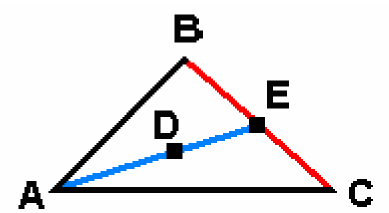
The objective is to prove that the open segment **(AX)** lies in the interior of the triangle**.**

II.3.9.



Physically speaking**,** the point **D** is the mirror image of **A** with respect to the line **BC.**

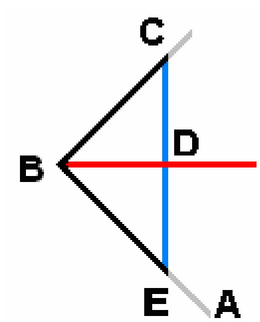
II.3.10.



The point **D** lies on the open segment **(AE),** where **E** lies on the open segment **(BC).**

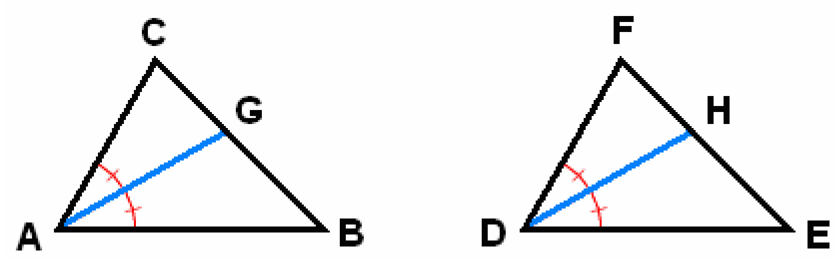
II.4 : Congruence, superposition and isometries

II.4.1.



We are given that the distances from **B** to **C** and **E** are equal**,** and that **D** is the midpoint of **[CE].** The objective is to show that **[BD** is the bisector ray for $\angle$**ABC.**

II.4.5.

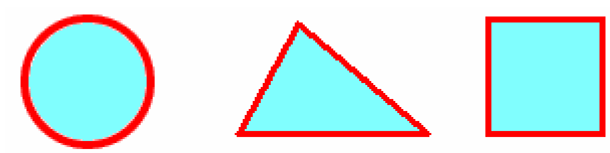


The rays **[AG** and **[DH** are bisectors, and the objective is to show that the bottom two triangles **∆GAB** and **∆HDE** are congruent if the large triangles are congruent.

II.4.6.

The same picture as above can be used for this exercise, but now the (converse) objective is to show that the large triangles are congruent if the bottom two triangles **∆GAB** and **∆HDE** are congruent.

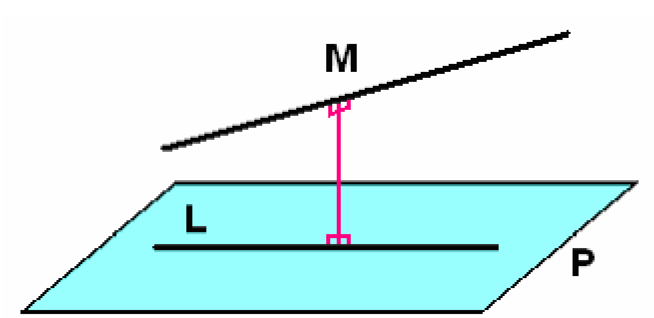
II.4.7.



All points on the circle are extreme points of the closed region bounded by the circle, but the extreme points of the closed regions bounded by the triangle and square are just the vertices of the respective polygons.

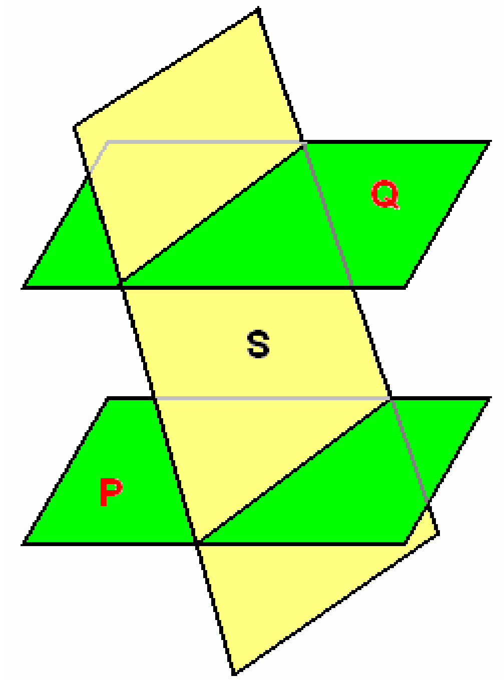
II.5 : Euclidean parallelism

II.5.1.



The lines **L** and **M** are skew lines, and the objective is to show that there is a unique plane **P** which contains **L** but has no points in common with **M.**

II.5.2.



The planes **P** and **Q** are assumed to be parallel**,** and the objective is to show that the lines where the plane **S** meets **P** and **Q** are also parallel**.**