

Show all your work

1) (10 pts.) Write down the book (Hilbert's) axioms for incidence geometry.

IA-1.

IA-2.

IA-3.

2) (15 pts.) Write down the book (Hilbert's) axioms for betweenness and separation in incidence geometry.

BA-1.

BA-2.

BA-3.

BA-4.

3) (15 pts.) Write down the book (Hilbert's) axioms for segment and angle congruence in incidence geometry.

CA-1.

CA-2.

CA-3.

CA-4.

CA-5.

Write the condition for (SAS).

4) (20 pts.) Prove that the base angles of an isosceles triangle are congruent. (justify your steps)

5) (20 pts.) Prove that the supplements of congruent angles are congruent. (justify your steps)

6) (20 pts.) Prove Pasch's Theorem. (justify your steps)