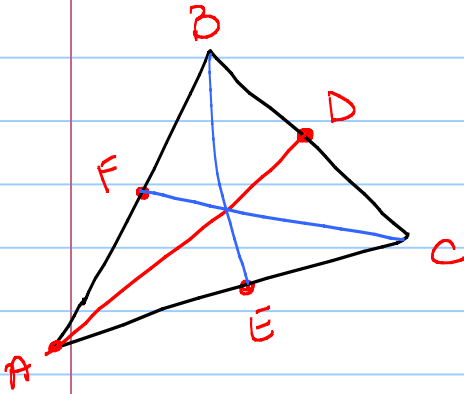


**Definition**

A median of a triangle is a line segment drawn from any vertex of the triangle to the midpoint of the opposite side. (A median divides into two congruent segments, or bisects the side to which it is drawn.)

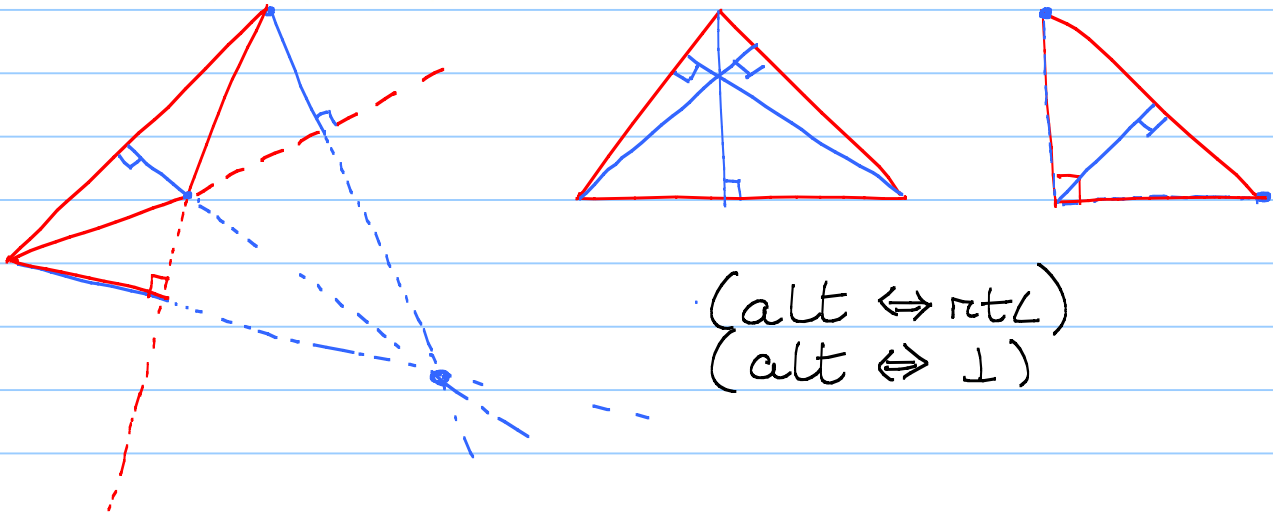
middle  
mdpt



( med  $\Leftrightarrow$  mdpt )  
 ( med  $\Leftrightarrow$   $\cong$  segs )  
 ( med  $\Leftrightarrow$  bis )

**Definition**

An altitude of a triangle is a line segment drawn from any vertex of the triangle to the opposite side, extended if necessary, and perpendicular to that side. (An altitude of a triangle forms right  $[90^\circ]$  angles with one of the sides.)



( alt  $\Leftrightarrow$  rt  $\angle$  )  
 ( alt  $\Leftrightarrow$   $\perp$  )

**Postulate**

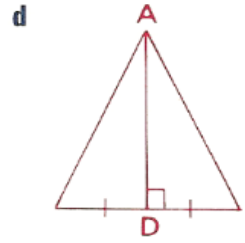
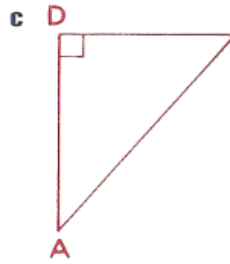
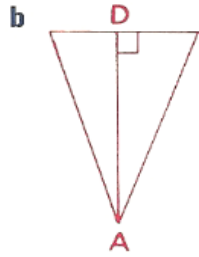
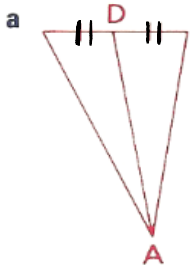
Two points determine a line (or ray or segment).

( 2 pts  $\Leftrightarrow$  seg )      ( Aux )

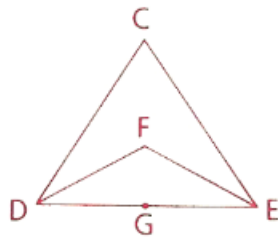
none

M alt

1 For the following figures, identify  $\overline{AD}$  as a median, an altitude, neither, or both according to what can be proved.



11 Given:  $\overrightarrow{DF}$  bisects  $\angle CDE$ .  
 $\overrightarrow{EF}$  bisects  $\angle CED$ .  
G is the midpt. of  $\overline{DE}$ .  
 $\overline{DF} \cong \overline{EF}$   
Prove:  $\angle CDE \cong \angle CED$



# HINTS (2-9) homework

2. SAS

6  $\overline{SW} \cong \overline{VW}$  (med  $\Rightarrow \cong$  segs)

3. SAS

7 SSS

4. ASA

8 ASA

5 SSS

9 Given:  $\odot O$

$$\angle NOG \cong \angle POG$$

Concl:  $\overline{RO}$  bis  $\angle NRP$ .

1  $\odot O$

1 Given

2  $\overline{ON} \cong \overline{OP}$

2

3  $\angle NOG \cong \angle POG$

3 Given

4  $\angle 1$  is supp to  $\angle NOG$ .

4

5  $\angle 2$  is supp to  $\angle POG$ .

5

6  $\angle 1 \cong \angle 2$

6

7  $\overline{OR} \cong \overline{OR}$

7

8  $\triangle ONR \cong \triangle OPR$

8

9  $\angle NRO \cong \angle PRO$

9

10  $\overline{RO}$  bis  $\angle NRP$ .

10

