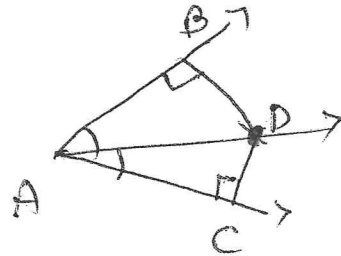


5.3. ANGLE BISECTORS OF TRIANGLES:-

1) ANGLE BISECTOR THEOREM:- IF A POINT IS ON THE BISECTOR OF AN ANGLE, THEN IT IS EQUIDISTANT FROM THE TWO SIDES OF THE ANGLE.

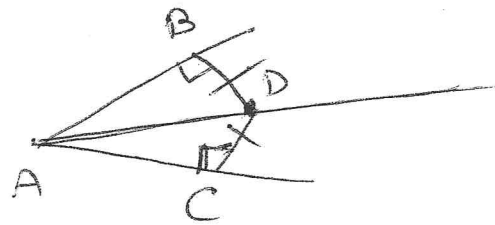
IF \overrightarrow{AD} BISECTS $\angle BAC$ AND $\overline{DB} \perp \overline{AB}$ AND $\overline{DC} \perp \overline{AC}$

Then $\overline{DB} = \overline{DC}$



2) IF A POINT IS IN THE INTERIOR OF AN ANGLE AND IS EQUIDISTANT FROM THE SIDES OF THE ANGLE, THEN IT LIES ON THE BISECTOR OF THE ANGLE.

IF $\overline{DB} \perp \overline{AB}$ AND $\overline{DC} \perp \overline{AC}$ AND $\overline{DB} = \overline{DC}$, THEN \overline{AD} BISECTS $\angle BAC$.

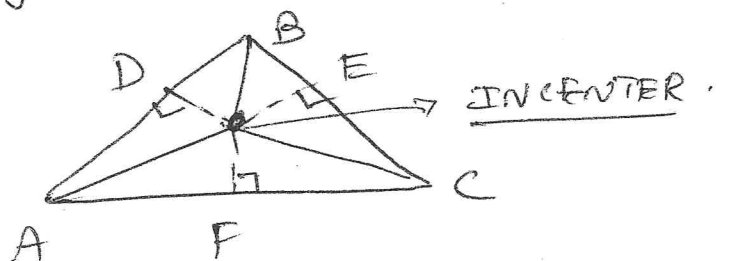


3) CONGRUENCY OF ANGLE BISECTORS OF A TRIANGLE (INCENTER)

THE ANGLE BISECTORS OF A TRIANGLE INTERSECT AT A POINT THAT IS EQUIDISTANT FROM THE SIDES OF THE TRIANGLE.

IF \overline{AP} , \overline{BP} AND \overline{CP} ARE ANGLE BISECTORS OF $\triangle ABC$.

Then $\overline{PD} = \overline{PE} = \overline{PF}$



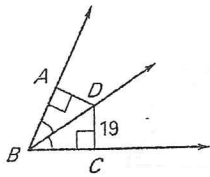
Name _____

Date _____

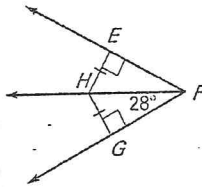
LESSON 53 Practice
For use with pages 310–316

Use the information in the diagram to find the measure.

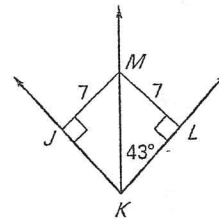
1. Find AD .



2. Find $m\angle EFH$.

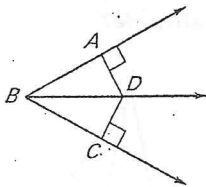


3. Find $m\angle JKL$.

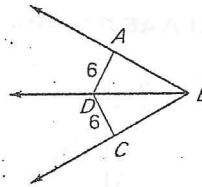


Can you conclude that \overrightarrow{BD} bisects $\angle ABC$? Explain.

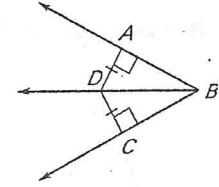
4.



5.

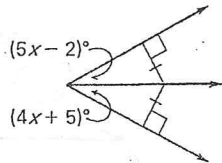


6.

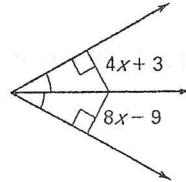


Find the value of x .

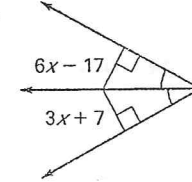
7.



8.



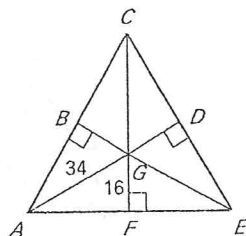
9.



Find the indicated measure.

INCENTER - \angle BISECTORS

13. Point G is the incenter of $\triangle ACE$. Find BG .



14. Point P is the incenter of $\triangle HKM$. Find JP .

