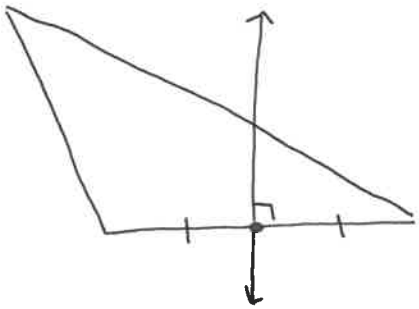
Perpendicular Bisector of a Triangle:



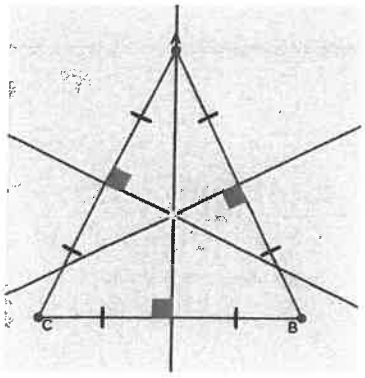
a line that intersects the midpoint of a side at 90°

Concurrent Lines: three or more lines that intersect at the same point

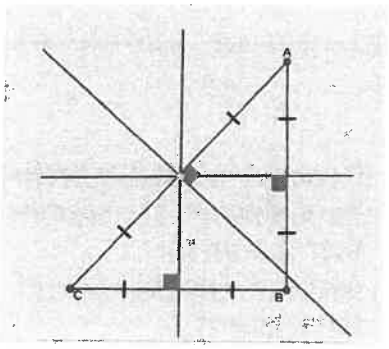
Point of Concurrency: the point of intersection of the concurrent lines

The 3 perpendicular bisectors are concurrent The point of concurrency can be:

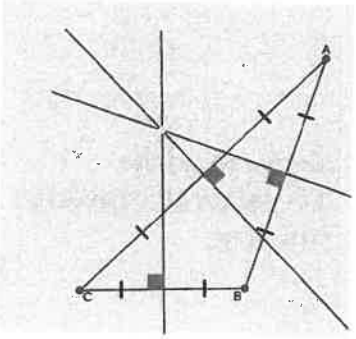
1. Inside the triangle



2. On the triangle



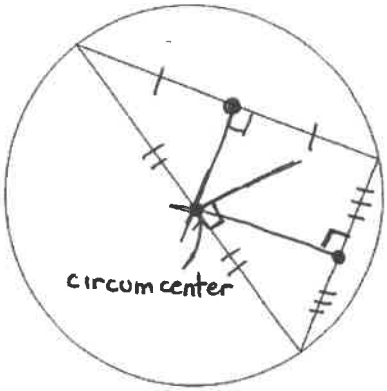
3. Outside the triangle



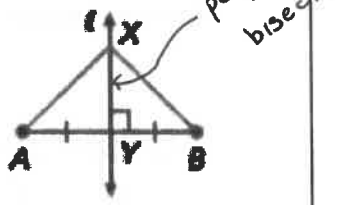
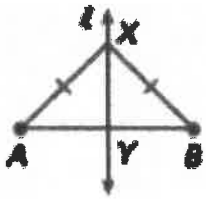
Circumcenter:

the point of concurrency of the perpendicular bisectors

Circumscribe: circle that surrounds a triangle touching each vertex only



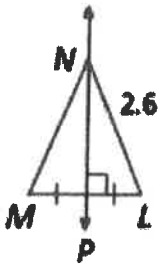
* circumcenter is the center of the circumscribed circle

Perpendicular Bisector Theorem	If a point is on the perpendicular bisector of a segment, then it is equidistant from the endpoints of the segment.	 $\overline{AX} \cong \overline{BX}$
Converse of the Perpendicular Bisector Theorem	If a point is equidistant from the endpoints of a segment, then it is on the perpendicular bisector of the segment	 $\overline{AY} \cong \overline{BY}$

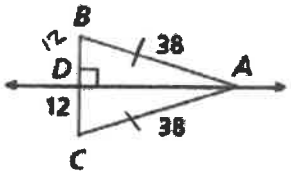
Geometry CC
Perpendicular Bisectors

1. Find each measure:

a. $MN = 2.6$



b. $BC = 24$

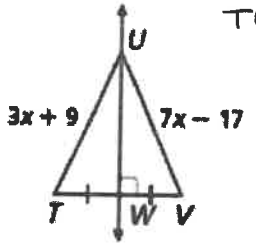


converse of Perp Bisector Thm

↳ $\overleftrightarrow{AD}$ perp bisector

↳ D is a midpoint

c. $TU =$



$TU = 3x + 9$

$= 3(6.5) + 9$

$= 28.5$

$3x + 9 = 7x - 17$

$-3x \quad -3x$

$9 = 4x - 17$

$+17 \quad +17$

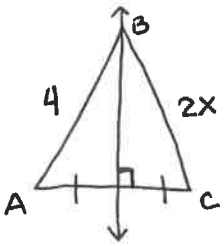
$\frac{26}{4} = \frac{4x}{4}$

$6.5 = x$

$\overleftrightarrow{MK}$ perp bisector

K midpoint

d)

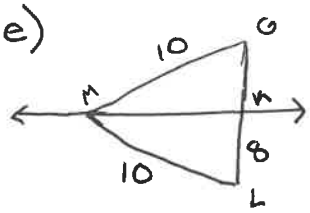


$\overline{AB} \cong \overline{BC}$

$\frac{4}{2} = \frac{2X}{2}$

$2 = X$

e)



$KG = 8$