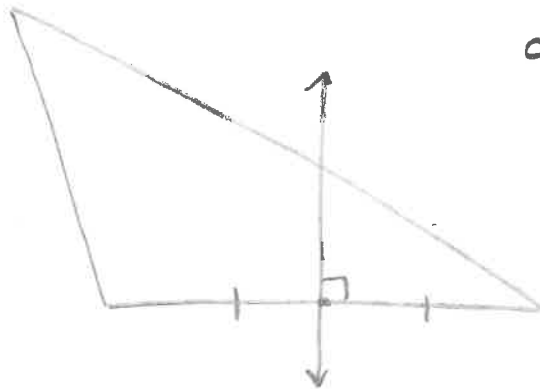


Perpendicular Bisector of a Triangle:



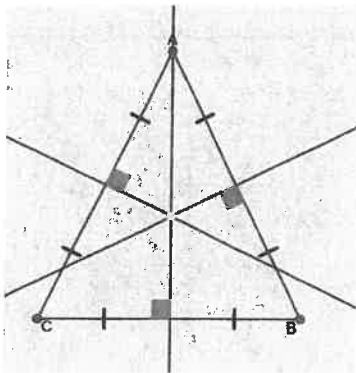
a line that intersects
the midpoint of a side
at 90°

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

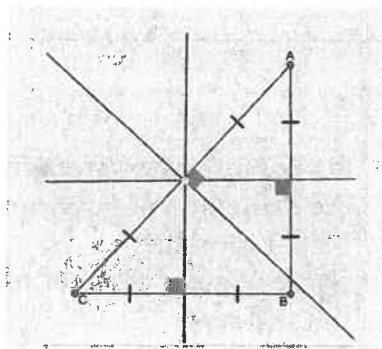
Point of Concurrency: the point of intersection of the
concurrent lines

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

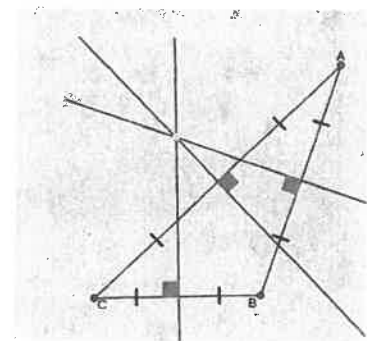
1. Inside the triangle



2. On the triangle



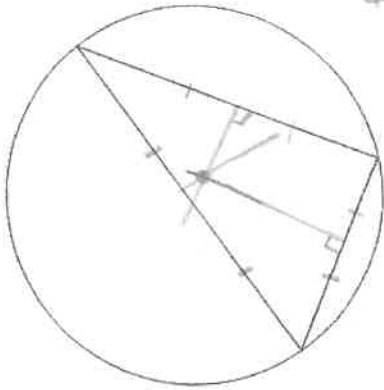
3. Outside the triangle



Circumcenter:

the point of concurrency of the perpendicular bisectors

Circumscribe: circle that surrounds a triangle touching each vertex only



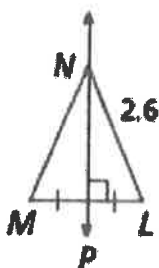
* circumcenter is the center of the circle that circumscribes the triangle

<p>Perpendicular Bisector Theorem</p>	<p>If a point is on the perpendicular bisector of a segment, then it is equidistant from the endpoints of the segment.</p>	
<p>Converse of the Perpendicular Bisector Theorem</p>	<p>If a point is equidistant from the endpoints of a segment, then it is on the perpendicular bisector of the segment</p>	

Geometry CP
5.1 Bisectors of a Triangle

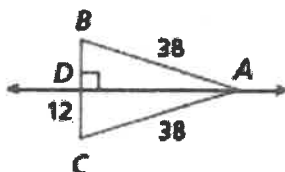
1. Find each measure:

a. $MN = 2.6$



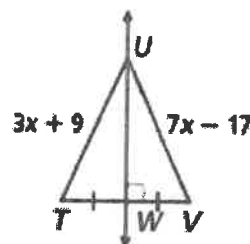
Perpendicular
Bisector Thm

b. $BC = 24$



Converse of
Perp Bisector
Thm

c. $TU = 28.5$



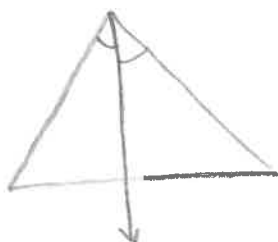
$$3x + 9 = 7x - 17$$

$$26 = 4x$$

$$6.5 = x$$

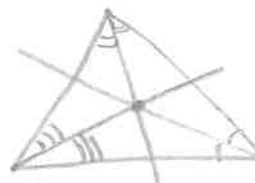
$$\begin{aligned} TU &= 3(6.5) + 9 \\ &= 28.5 \end{aligned}$$

Angle Bisector of a Triangle:



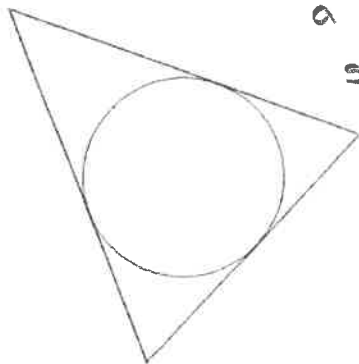
Incenter:

the point of concurrency
of the angle bisectors



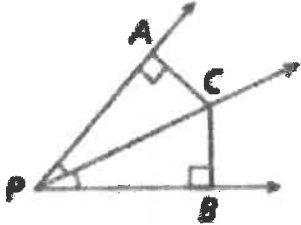
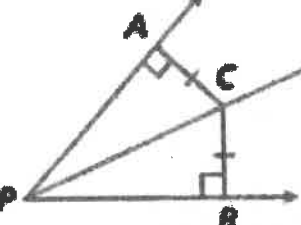
Inscribe:

the circle that is inside
a triangle touching each
side exactly once



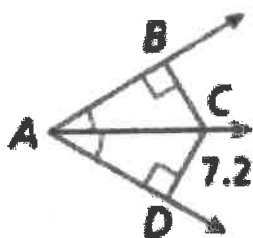
* incenter is the center of
the circle that inscribes the
triangle

Geometry CP
5.1 Bisectors of a Triangle

<p>Angle Bisector Theorem</p>	<p>If a point is on the bisector of an angle, then it is equidistant from the sides of that angle</p>	
<p>Converse of the Angle Bisector Theorem</p>	<p>If a point in the interior of an angle is equidistant from the sides of the angle, then it is on the bisector of the angle.</p>	

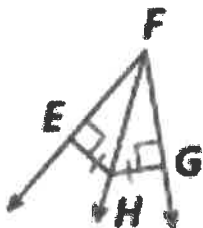
2. Find each measure:

a. $BC = 7.2$



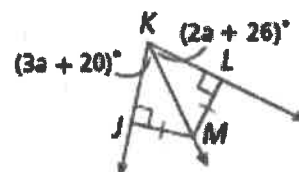
Angle Bisector
Thm

b. If $m\angle EFG = 50^\circ$
then $m\angle EFH = 25^\circ$



converse of
Angle Bisector
Thm

c. $m\angle MKL = 38^\circ$



$$3a + 20 = 2a + 26$$

$$a = 6$$

$$m\angle MKL = 2(6) + 26 = 38^\circ$$