Geometry
Unit 5 ~ Day 4

Notes: key

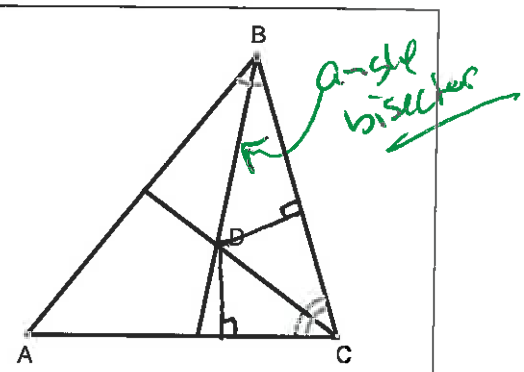
Concurrent Lines in a Triangle

Example 1:

1. Point D can be described as:
   a) a Circumcenter b) an Orthocenter
   c) an Incenter d) a Centroid

2. If the distance from D to $\overline{AC}$ =5x-10 and the distance from D to $\overline{BC}$ =3x+4, Find x.

$5x-10=3x+4$
$2x=14$
$x=7$



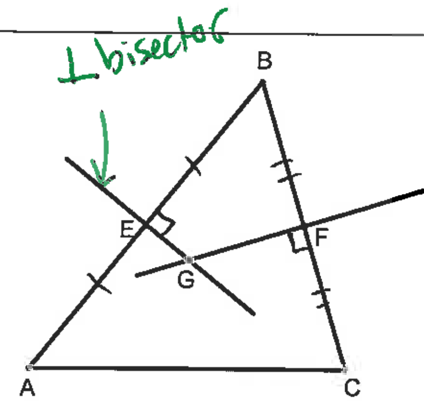
Example 2:

Given: $\triangle ABC$ with Circumcenter G:

1. $\overline{EG}$ can be described as:
   a) Median b) $\angle$ bisector c) $\perp$ bisector d) Altitude

2. If AG=3x-8 and BG=4x-20, find x.

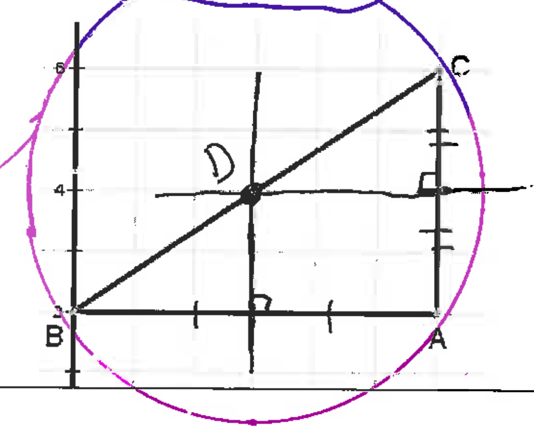
$3x-8=4x-20$
$12=x$



Example 3:

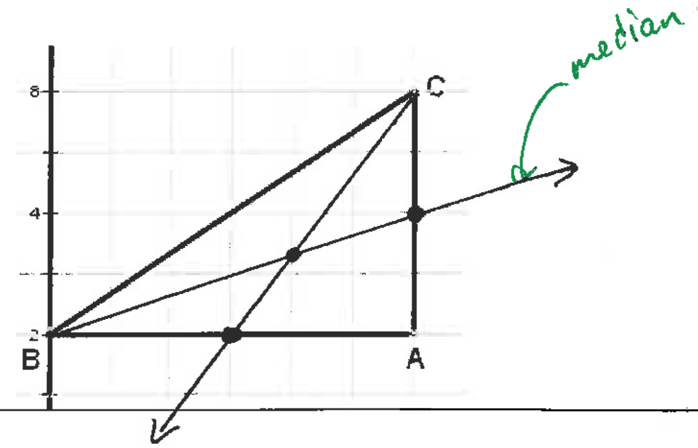
Find the center of the circle that can be circumscribed around $\triangle ABC$.

circumcenter



Example 4:

1. Locate the Centroid of $\triangle ABC$.



Example 5:

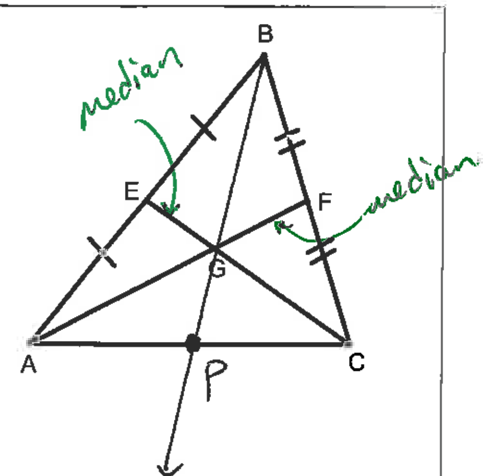
1. Point G can be described as:
   a) a Centroid   b) a Circumcenter
   c) an Incenter   d) an Orthocenter

2. If the intersection of ray $\overrightarrow{BG}$ and $\overline{AC}$ is point P. What is the ratio of BG:GP?
   a) 3:1   b) 2:3   c) 2:1   d) 1:2

3. If GP=18, find BG and BP.

$BG = 2GP$
$BG = 2(18) = 36$

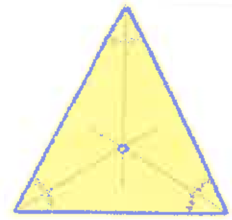
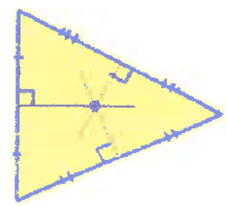
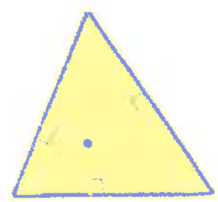
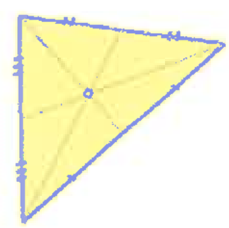
$BP = BG + GP$
$= 18 + 36$
$= 54$



Geometry – Mr. Bo
Unit 5 – Day 4

Name: ______________________

Triangle Centers Summary

	Point of Concurrence	Theorem	Picture	Location
∠ Bisectors	Incenter	equidistant to the sides.		**Acute:** In **Obtuse:** In **Right:** In
⊥ Bisectors	Circumcenter	equidistant to the verticies.		**Acute:** In **Obtuse:** out **Right:** on
Altitudes	orthocenter	none		**Acute:** In **Obtuse:** out **Right:** on
Medians	Centroid.	Divides median into 2:1 ratio		**Acute:** In **Obtuse:** In **Right:** In

the most letters. (large)

Circum ~~center~~ — perpendicular ~~Bisector~~

least letters (small)

In ~~center~~ — angle ~~Bisector~~

(medium)

Ortho ~~center~~ — Altitudes

Centroid — medians

think "center" — think "middle"

Same.