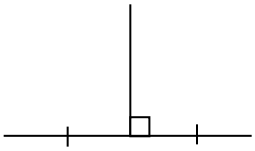
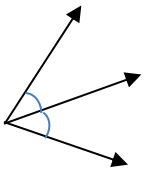
Points of Concurrency Notes

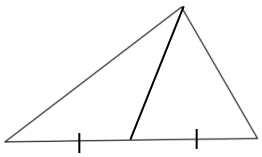
Perpendicular Bisector – A line _____ to a segment at the segment's _____



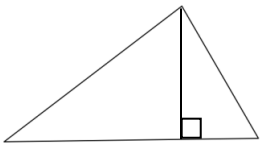
Angle Bisector – a ray that divides an angle into two _____ angles



Median – Segment from the _____ to the _____ of the opposite side



Altitude – _____ segment from a _____ to the opposite side



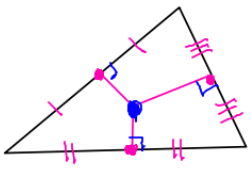
When three or more lines intersect at one point, the lines are _____.

The _____ is the point where they intersect.

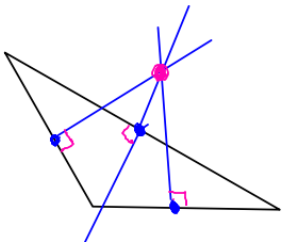
Circumcenter

- Equidistant from the vertices
- Find it by drawing the perpendicular bisectors
- Can be inside, outside, or on the triangle

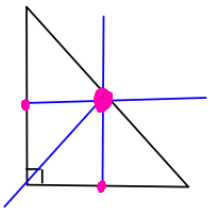
Acute



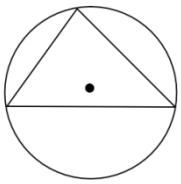
Obtuse



Right



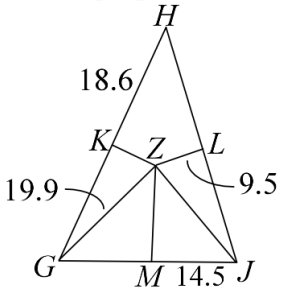
- It is also the center of the circumscribed circle



$\overline{KZ}$, $\overline{LZ}$, and $\overline{MZ}$ are the perpendicular bisectors

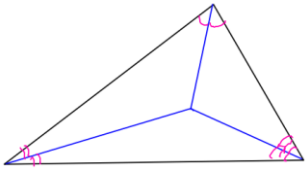
HZ =

GM =

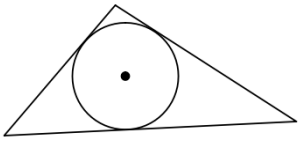


Incenter

- Equidistant from the sides
- Find it by drawing the angle bisectors
- Always inside the triangle

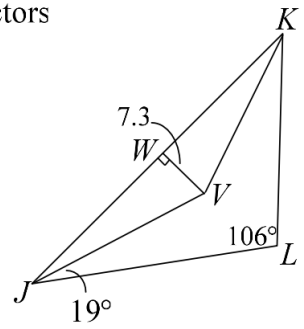


- It is also the center of the inscribed circle



$\overline{JV}$ and $\overline{KV}$ are angle bisectors

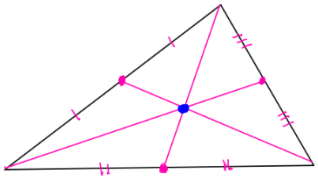
Distance from V to $\overline{KL}$ =



$m\angle VKL$ =

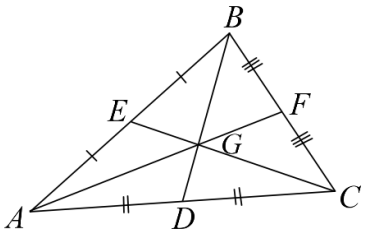
Centroid

- Located $\frac{2}{3}$ of the distance from each vertex to the midpoint of the opposite side
- Find it by drawing the medians
- Always inside the triangle
- It's the center of gravity (balancing point)



AF = 9, GE = 2.4

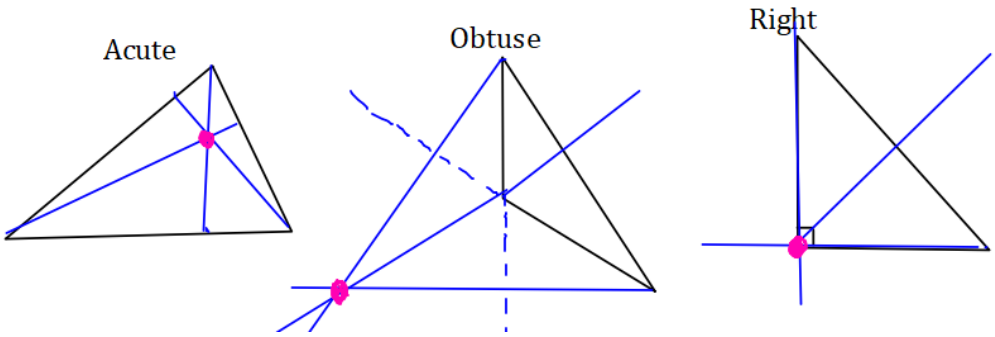
AG =



CE =

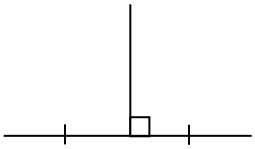
Orthocenter

- Find it by drawing the altitudes
- Can be inside, outside, or on the triangle

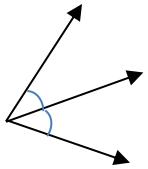


Points of Concurrency Notes Key

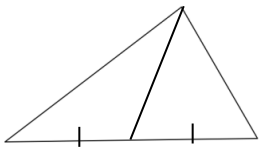
Perpendicular Bisector – A line perpendicular to a segment at the segment's midpoint



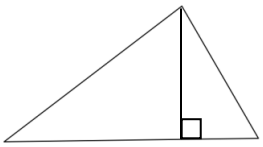
Angle Bisector – a ray that divides an angle into two congruent angles



Median – Segment from the vertex to the midpoint of the opposite side



Altitude – Perpendicular segment from a vertex to the opposite side



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The point of concurrency is the point where they intersect.

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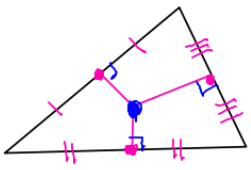
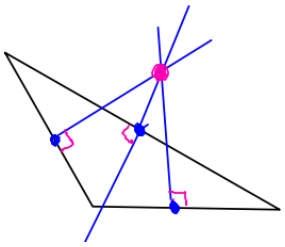
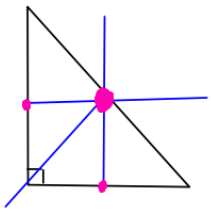
Acute



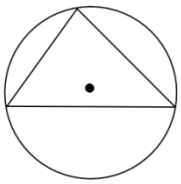
Obtuse



Right



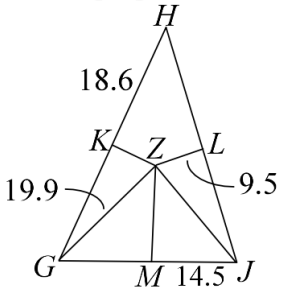
- It is also the center of the circumscribed circle



$\overline{KZ}$, $\overline{LZ}$, and $\overline{MZ}$ are the perpendicular bisectors

HZ = 19.9

GM = 14.5



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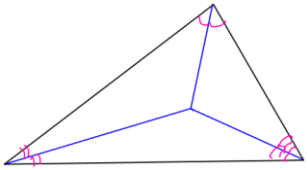

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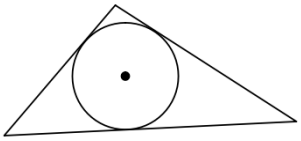
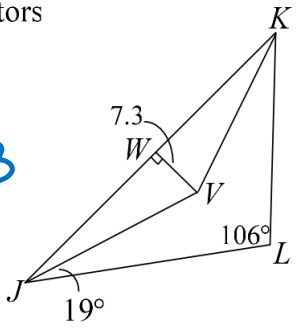


$\overline{JV}$ and $\overline{KV}$ are angle bisectors

Distance from V to $\overline{KL}$ = 7.3

$m\angle VKL$ = 18°



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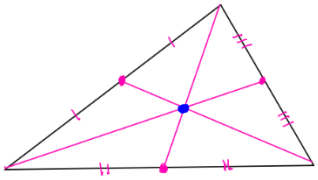
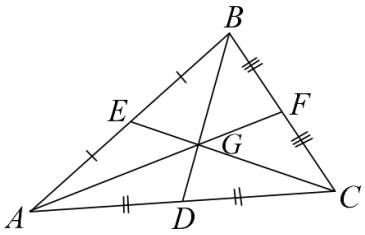


AF = 9, GE = 2.4

AG = $\frac{2}{3}(9) = 6$

CE = $2.4(3) = 7.2$



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