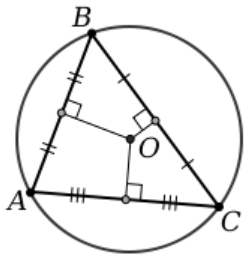
In a triangle, what is a <u>perpendicular bisector</u>?

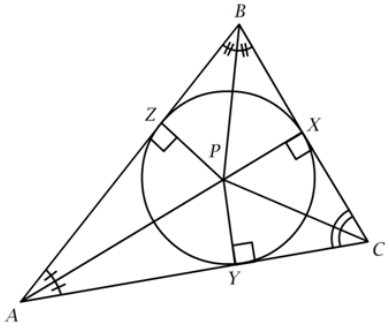


Where do the three perpendicular bisectors cross?

What is special about this point?

1. It is the same distance to all the _____ of the triangle.
2.

In a triangle, what is an <u>angle bisector</u>?

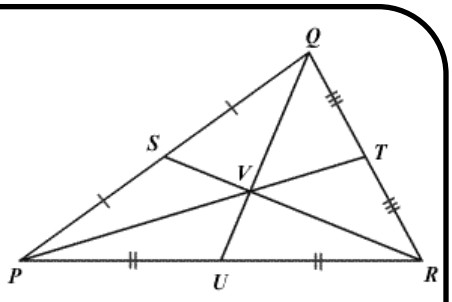


Where do the three angle bisectors cross?

What is special about this point?

1. It is the same distance to all the _____ of the triangle.
2.

In a triangle, what is a <u>median</u>?

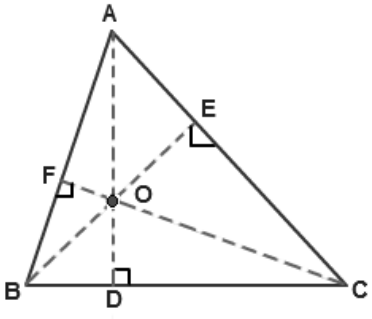


Where do the three medians cross?

What is special about this point?

1. It splits the median into a _____ ratio. Or, the longer part of the median is _____ as long as the shorter part.
2.

In a triangle, what is an <u>altitude</u>?



Where do the three altitudes cross?

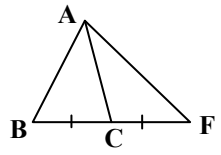
What is special about this point?

Worksheet Altitude, Median,
Angle bisector, perpendicular Bisector

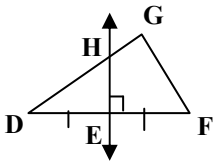
Name _____

Name the special segment for 1-4

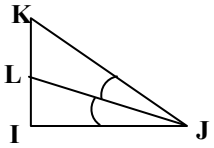
1) $\overline{AC}$



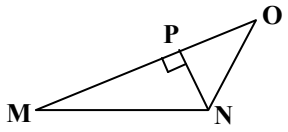
2) $\overleftrightarrow{HE}$



3) $\overline{JL}$

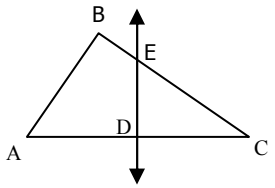


4) $\overline{PN}$

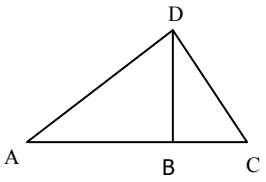


5) Draw a triangle with an altitude outside the triangle.

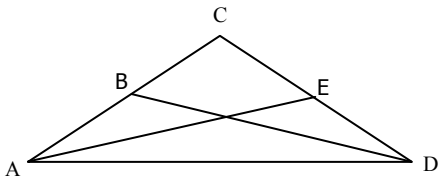
6) In ΔABC, $\overleftrightarrow{DE}$ is perpendicular bisector of $\overline{AC}$ with D on $\overline{AC}$. If $AD = 2y + 4$, $CD = y + 12$, and $m\angle EDC = 5(x - 12)°$. Find the value of x and y. Find length of $AD, DC,$ and, AC.



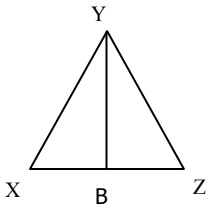
7) $\overline{DB}$ is an altitude of ΔADC, and $m\angle DBC = (n^2 + 81)°$. Find the value of n.



8) $\overline{DB}$ and $\overline{AE}$ are medians. If $BC = 6y + 10$, $AB = y^2 + 3y$, $CE = 6x + 12$, $ED = 2x + 60$, then find the value of x and y, and the length of the segments.



9) $\overline{YB}$ is an altitude of ΔXYZ, and $m\angle YBZ = (6x - 6)°$. Find the value of x. What is the measure of $\angle YBZ$?



10) In ΔDEG $\overleftrightarrow{FH}$ is a perpendicular bisector of $\overline{DG}$ with H on $\overline{DG}$. If $DH = 2y + 3$, $GH = 7y - 42$, and $m\angle FHG = (x^2 + 9)°$, then find the value of x and y. What is the measure of DG?