

# Notes

Section 5.3  
Medians and  
Altitudes of  
Triangles

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Period: \_\_\_\_\_

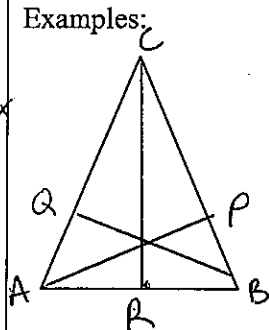
Essential  
Question

How can I draw an altitude and median in acute, right and obtuse triangles?

Altitude

A line segment, drawn from any vertex, perpendicular to the line that contains the opposite side.

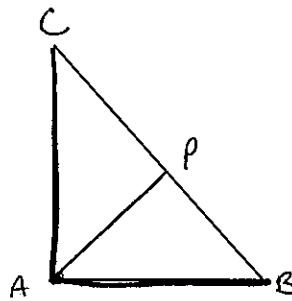
Examples:



Acute Triangle  
 $\overline{CR}$   $\overline{BQ}$   $\overline{AP}$

The altitudes meet

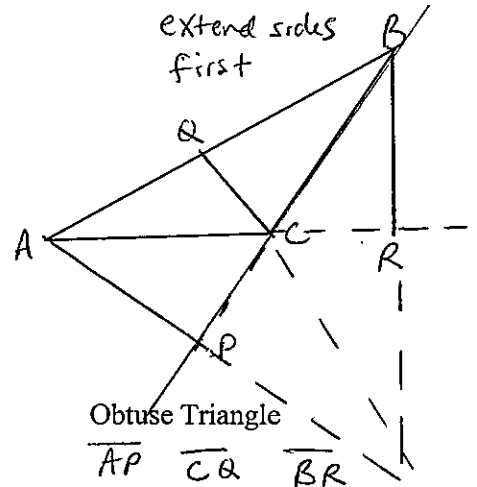
At one point  
inside triangle



Right Triangle  
 $\overline{AP}$   $\overline{BQ}$   $\overline{CA}$

The altitudes meet

meet at the  
90° vertex



Obtuse Triangle  
 $\overline{AP}$   $\overline{CQ}$   $\overline{BR}$

The altitudes meet

At one point  
outside the triangle

Acute - meet inside  $\Delta$

Right - meet at R/A vertex

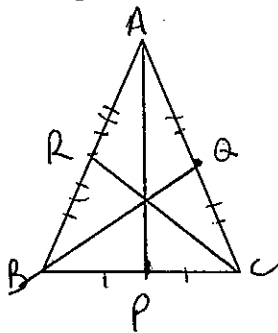
Obtuse - extend sides  
first - they meet  
outside  $\Delta$

Each vertex must  
meet w/ the opposite  
side at a 90° angle

Median

A line segment that joins a vertex of a triangle to the midpoint of the opposite side.

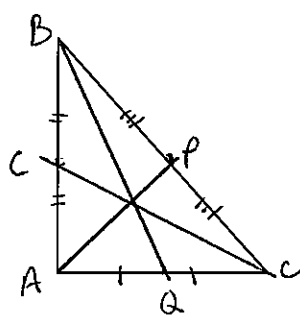
Examples:



Acute Triangle  
 $\overline{AP}$   $\overline{BQ}$   $\overline{CR}$

The medians meet

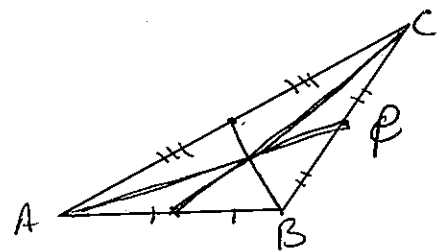
at one point  
inside the triangle



Right Triangle  
 $\overline{AP}$   $\overline{BQ}$   $\overline{CR}$

The medians meet

at one point  
in the  $\Delta$



Obtuse Triangle  
 $\overline{AP}$   $\overline{BQ}$   $\overline{CR}$

The medians meet

at one point  
in the  $\Delta$

First - Find the midpoint  
of each side -  
Mark congruent sides  
w/ the marks

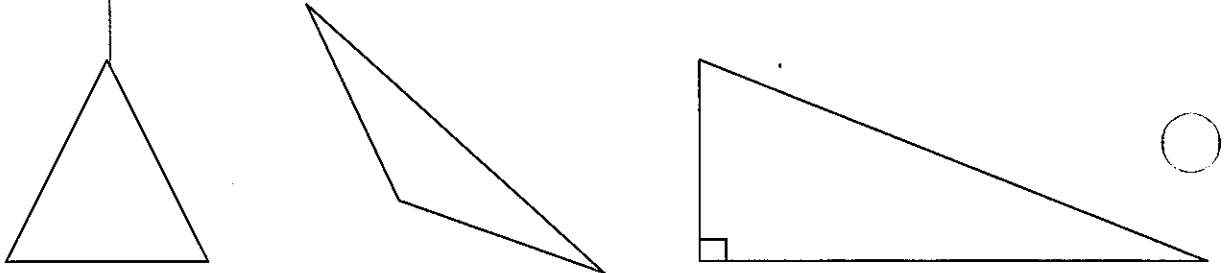
Example #1

A. Draw a large acute triangle ABC. Let  $AB = 2$  inches,  $BC = 2$  inches.

- B. Construct the midpoint M of BC.
- C. Construct the midpoint K of AC.
- D. Construct the midpoint L of AB.
- E. Draw three medians. Use P to label the point of intersection.

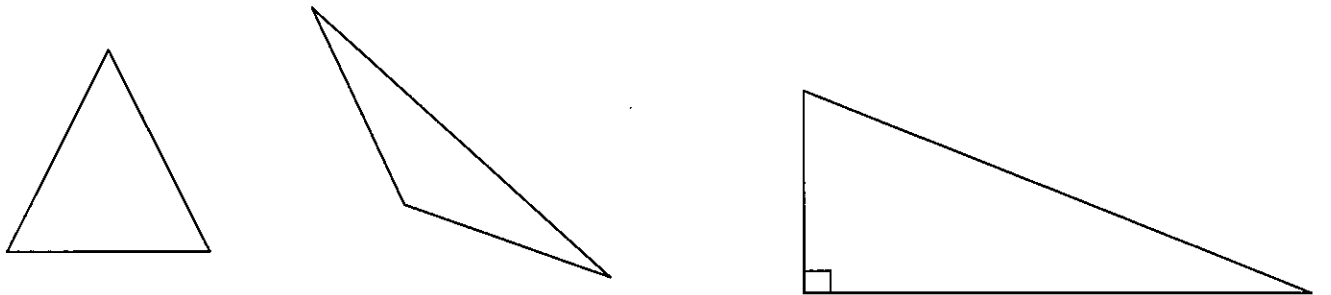
Example #2

Construct the three altitudes of each triangle.



Example #3

Construct the medians of each triangle.



Summary

I can draw an altitude of a triangle by connecting each angle w/ the opposite side at a  $90^\circ$  angle

I can draw a median of a triangle by connecting each angle w/ the midpoint of the opposite side.