

Geometry – Unit 5 Activity
Paper Folding – Special Segments in a Triangle

G.CO.C.10

Name: _____!

Date: _____ Pd: _____

Paper folding is a powerful tool in mathematics.

Start with a similar triangle (scalene acute triangle). {attached –page 2}

Students should use a ruler when creasing. This helps with accuracy.

Median: Locate and mark a base, then fold in half and pinch to identify the midpoint. Using a straight edge, connect the opposite vertex to the midpoint.

Perpendicular Bisector: Fold the base in half again making sure that the base is lined up with itself and crease. This crease is important because it creates a right angle. When unfolded, use a straight edge to trace the fold that shows a perpendicular line to the base through the midpoint.

Altitude: This one is a little tricky; a right angle must be folded so that it goes through the opposite vertex. This is the toughest one to fold and is usually not accurately done. Students should do the best they can. Success is usually achieved when using a ruler.

Angle Bisector: Students pick this one up quickly, but get the process mixed up with the fold of a median. They must fold the two sides on top of each other and crease.

Midsegment: Students should fold and pinch the midpoints of two bases and use a straight edge to connect them for a midsegment.

Definitions: (Written on the back.) These can be done before or after each segment is constructed.

- Definitions done before allow students to determine how to fold the triangle to meet the definition.
- Definitions done after require students to derive a definition based on the critical attributes used to create the segment.

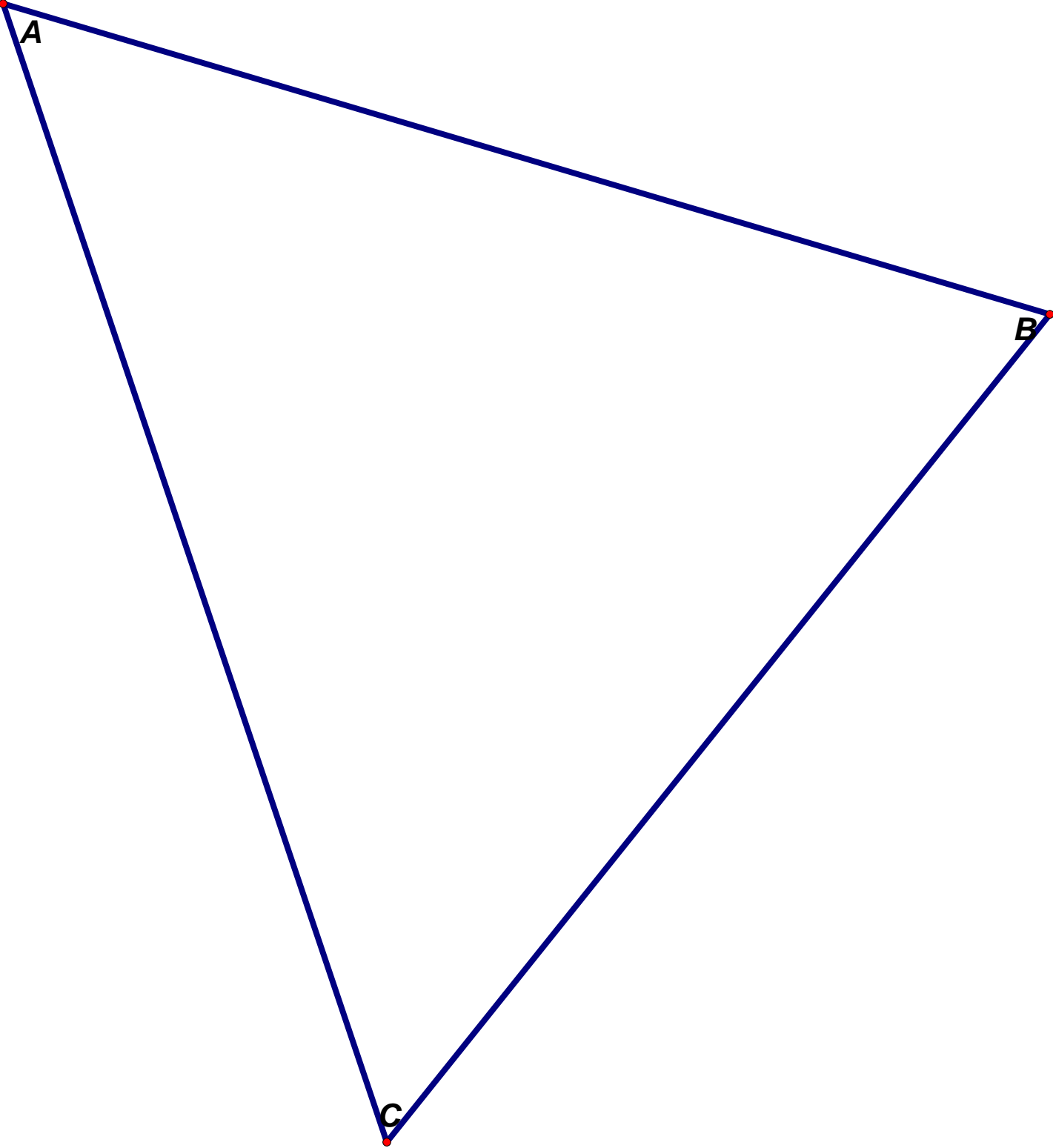
EXTENSION:

Cut out all types of triangles and mark the base a student will use to view their triangle. {attached –pages 3-14}
After folding all special line segments, identify students with only a certain number of folds instead of all four/five different folds.

They hold up their triangles and through investigation/discussion can explain why that happened. This requires them to connect the characteristics of the triangle to the type of triangle.



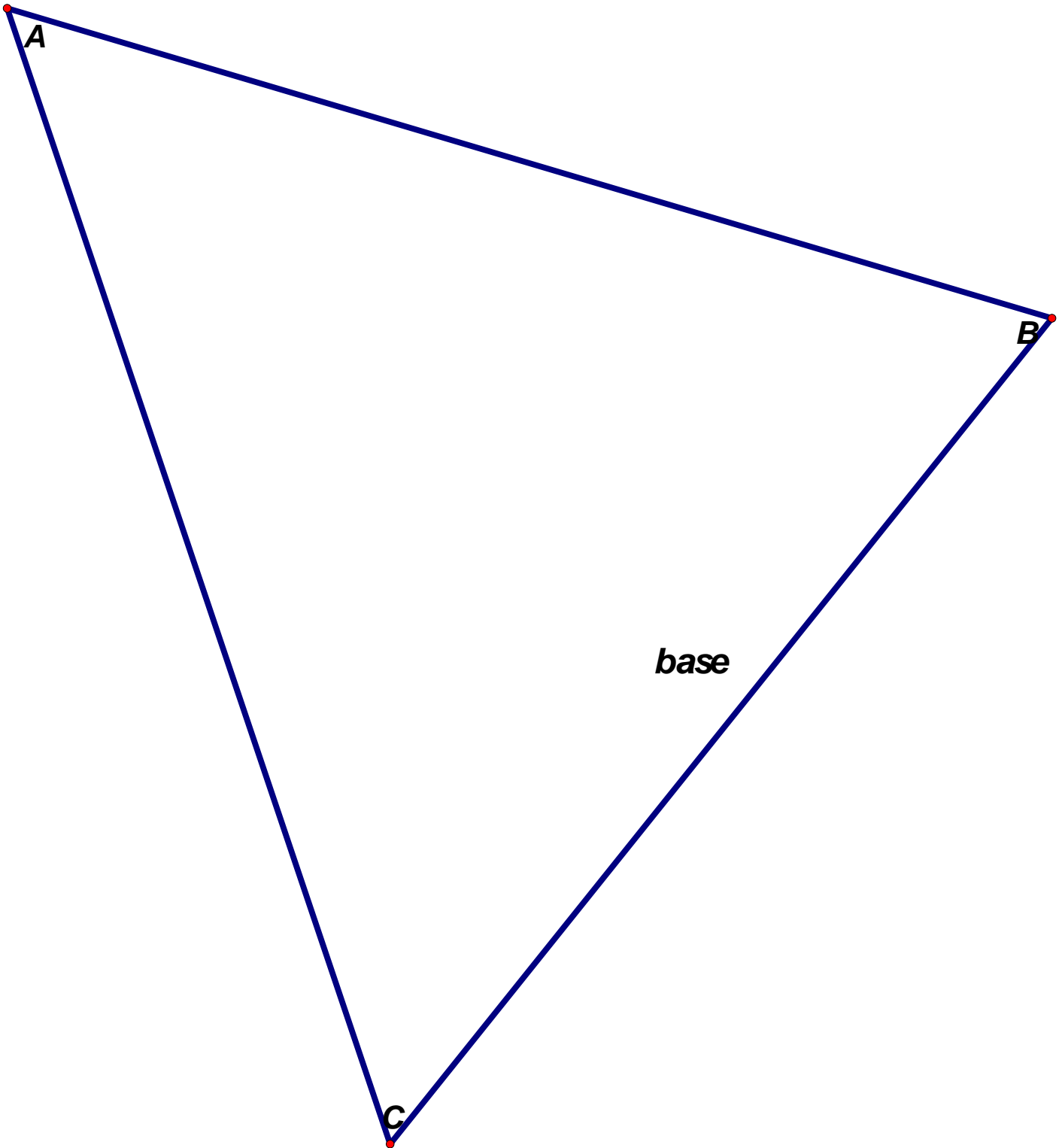
scalene acute triangle





EXTENSION:

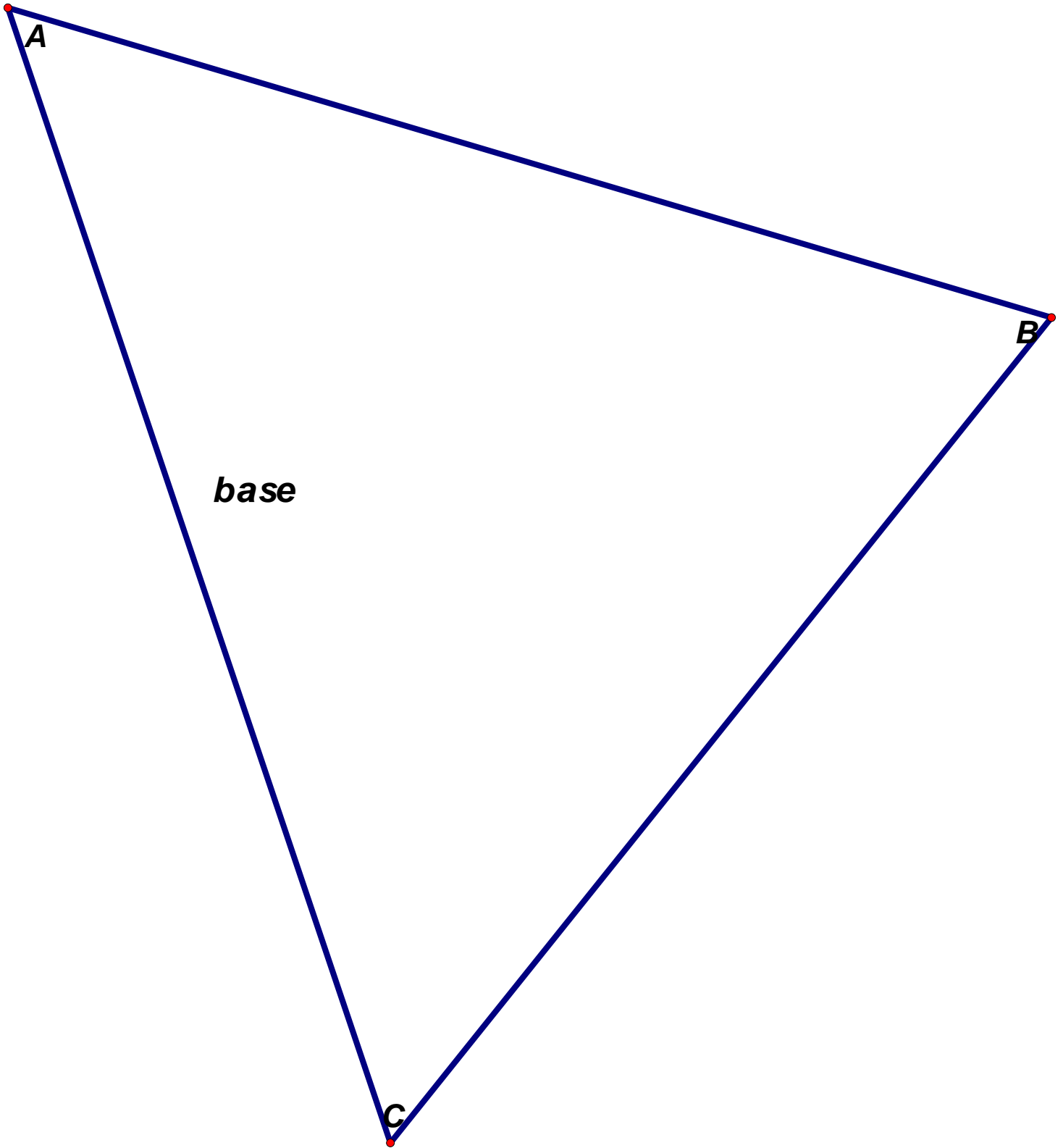
scalene acute triangle, base a





EXTENSION:

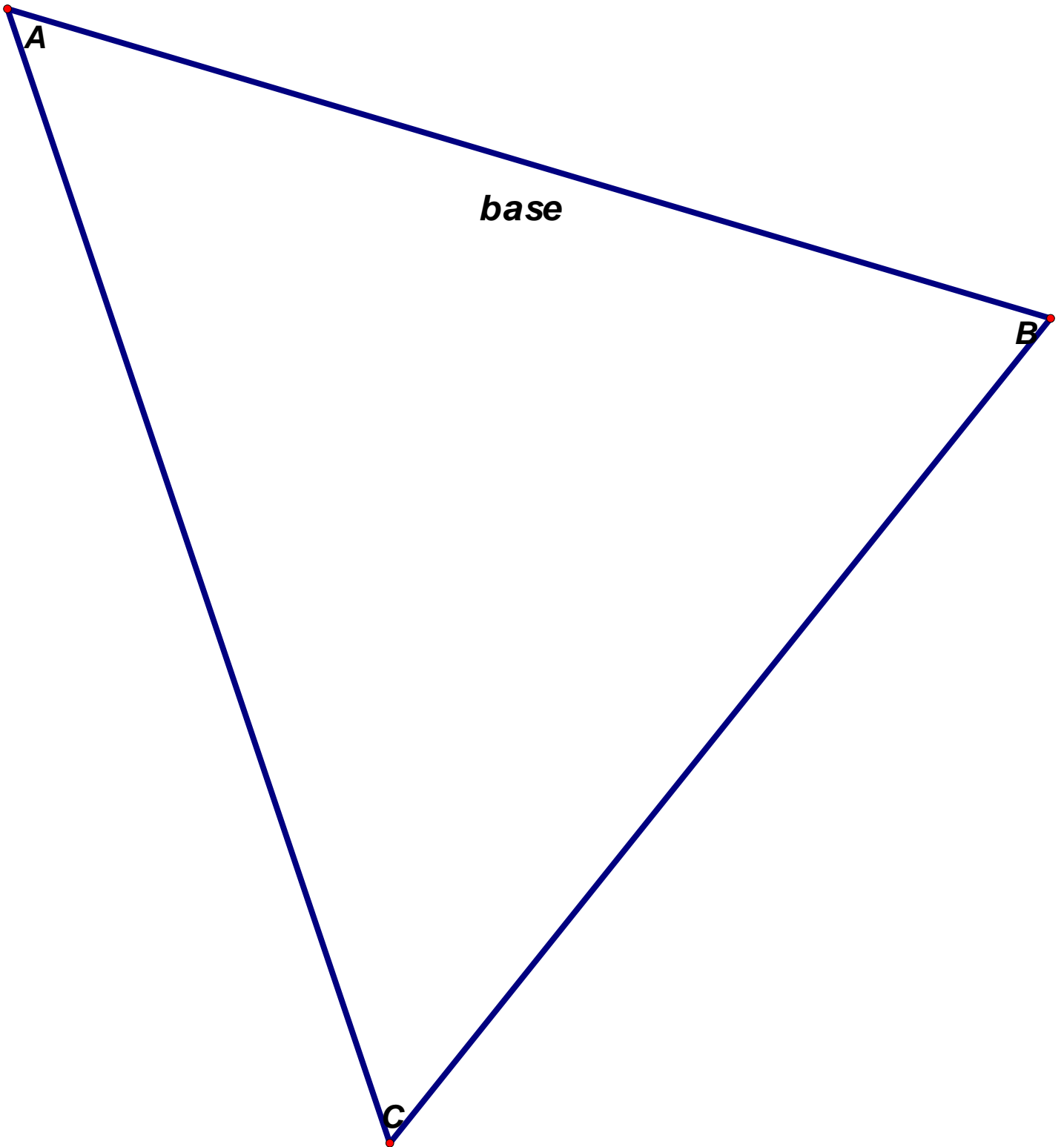
scalene acute triangle, base b





EXTENSION:

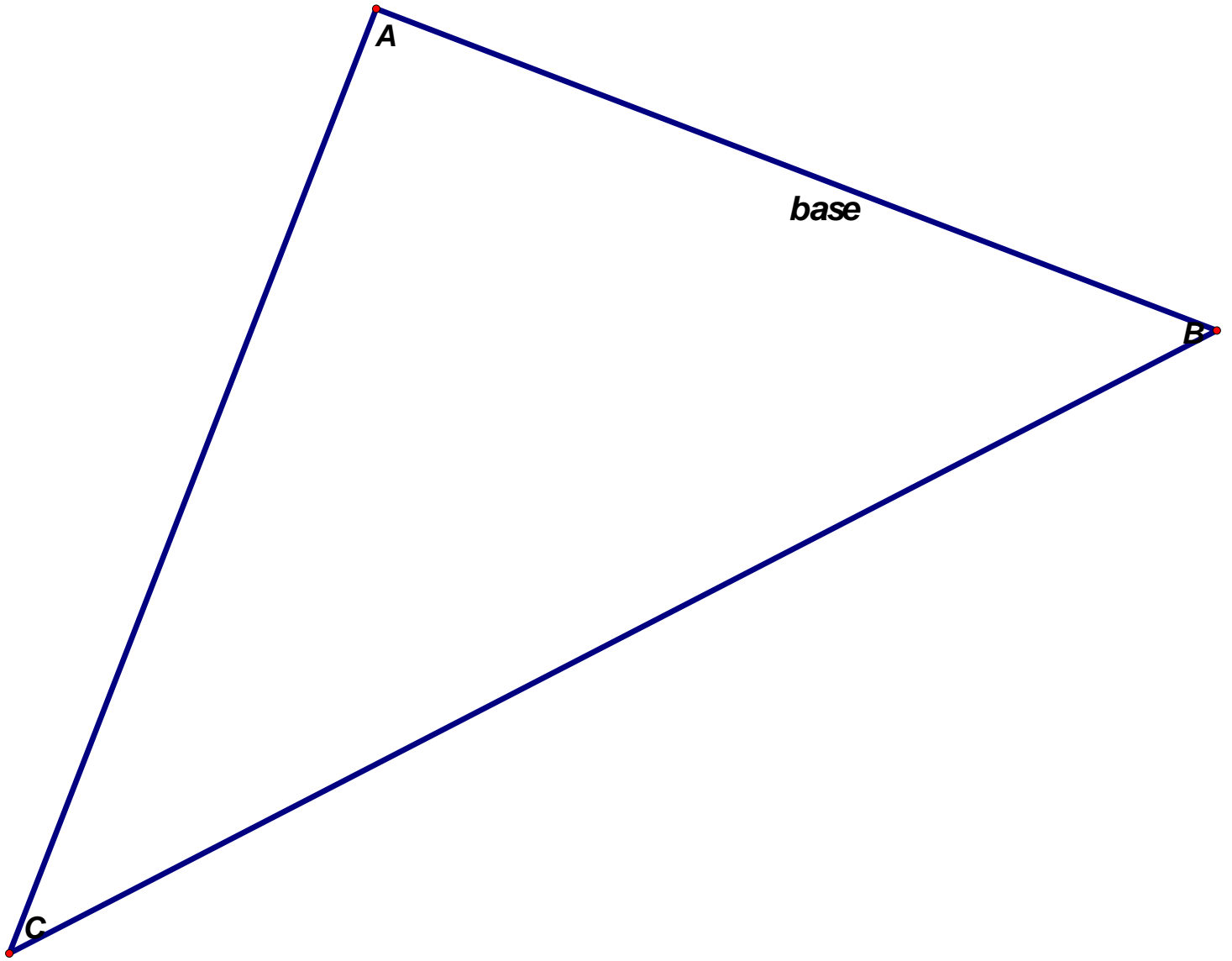
scalene acute triangle, base c





EXTENSION:

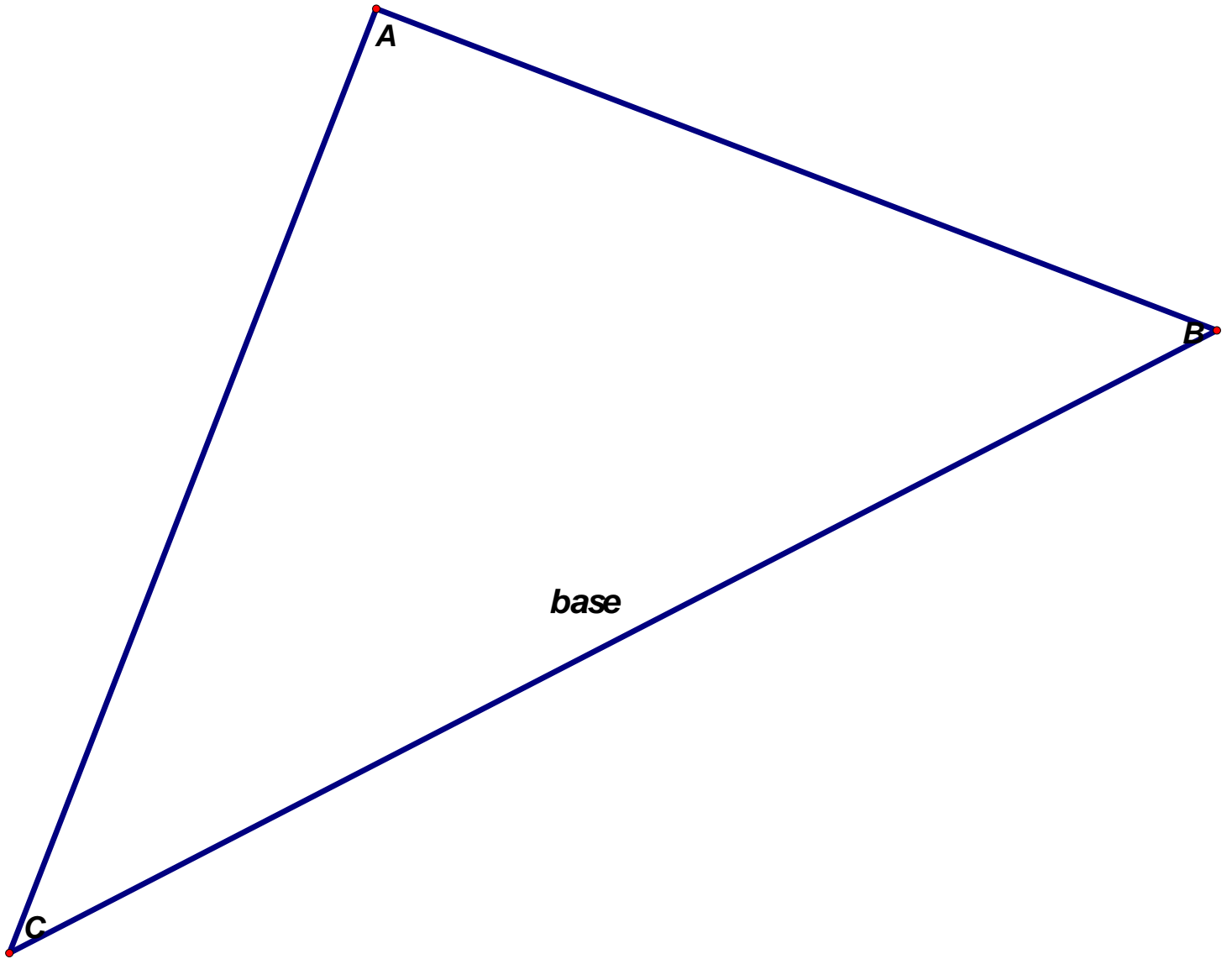
scalene right triangle, base c





EXTENSION:

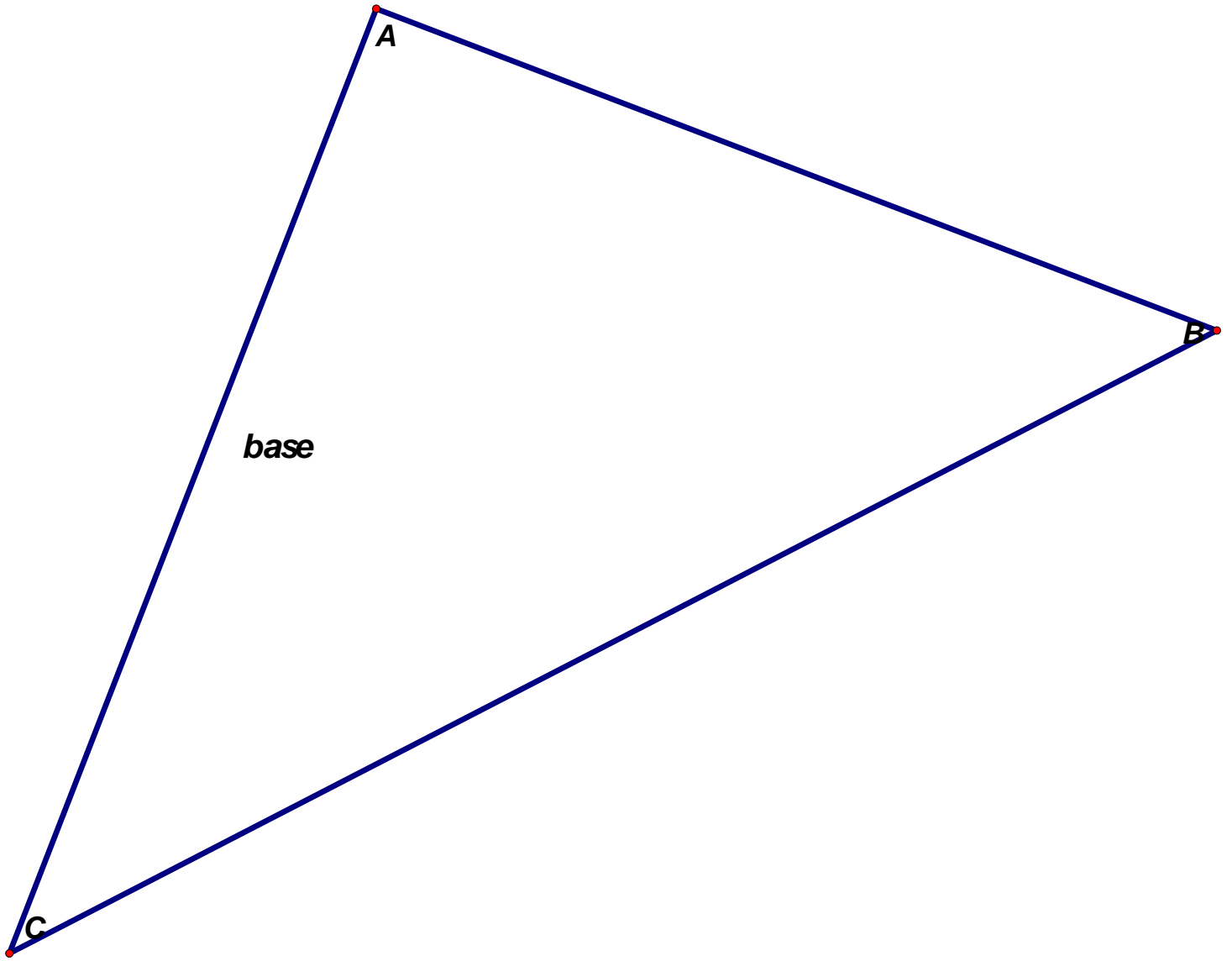
scalene right triangle, base a





EXTENSION:

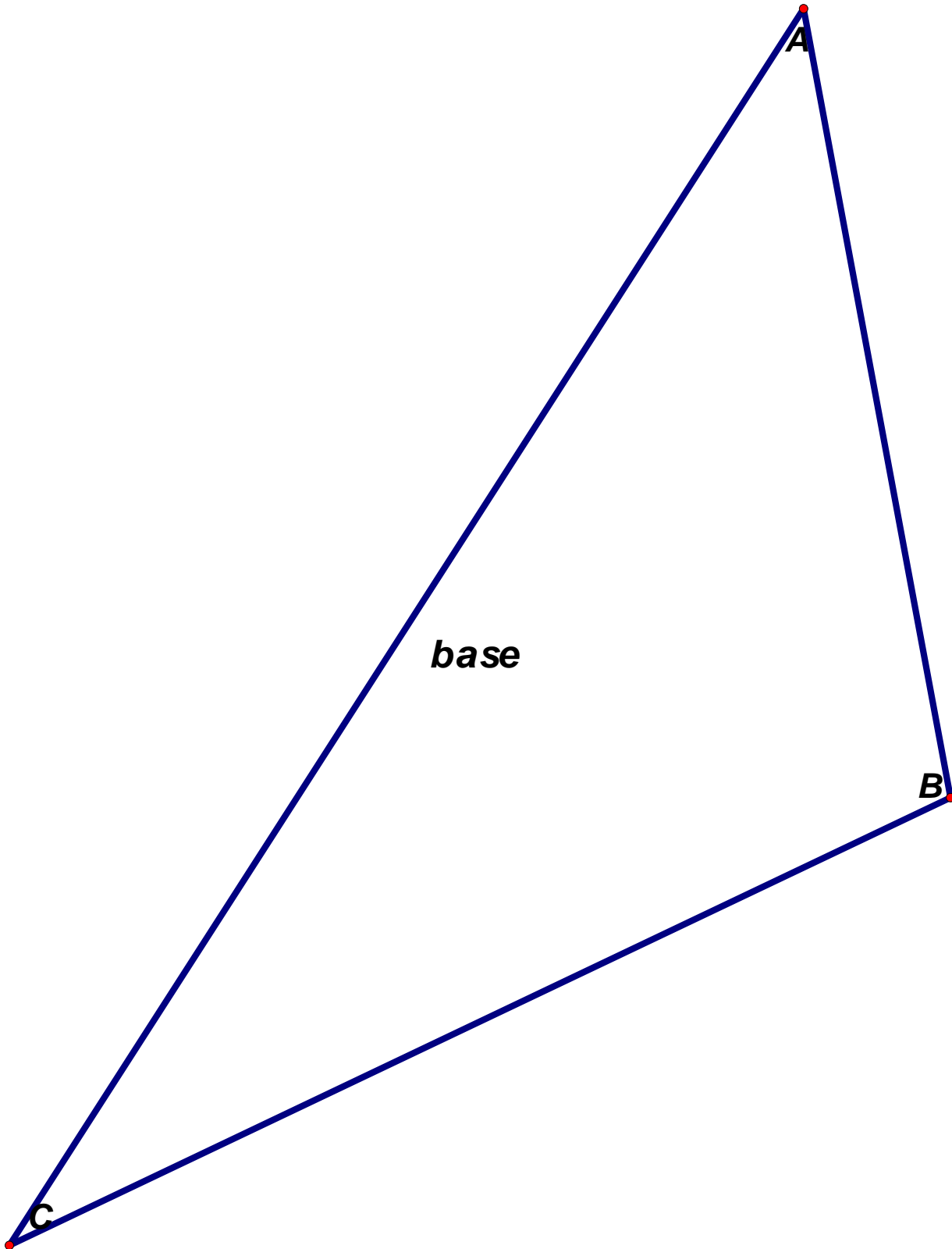
scalene right triangle, base b





EXTENSION:

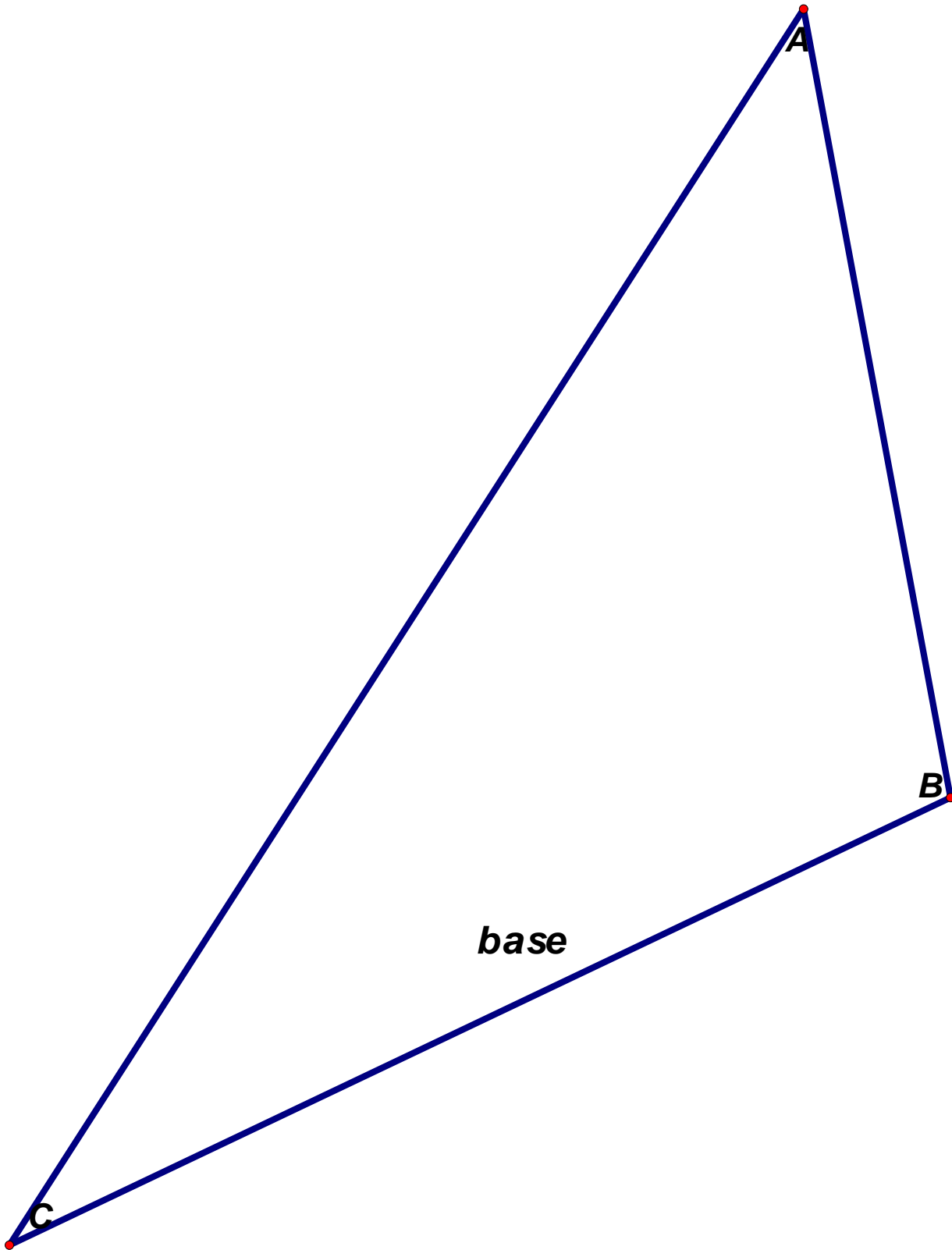
scalene obtuse triangle, base b





EXTENSION:

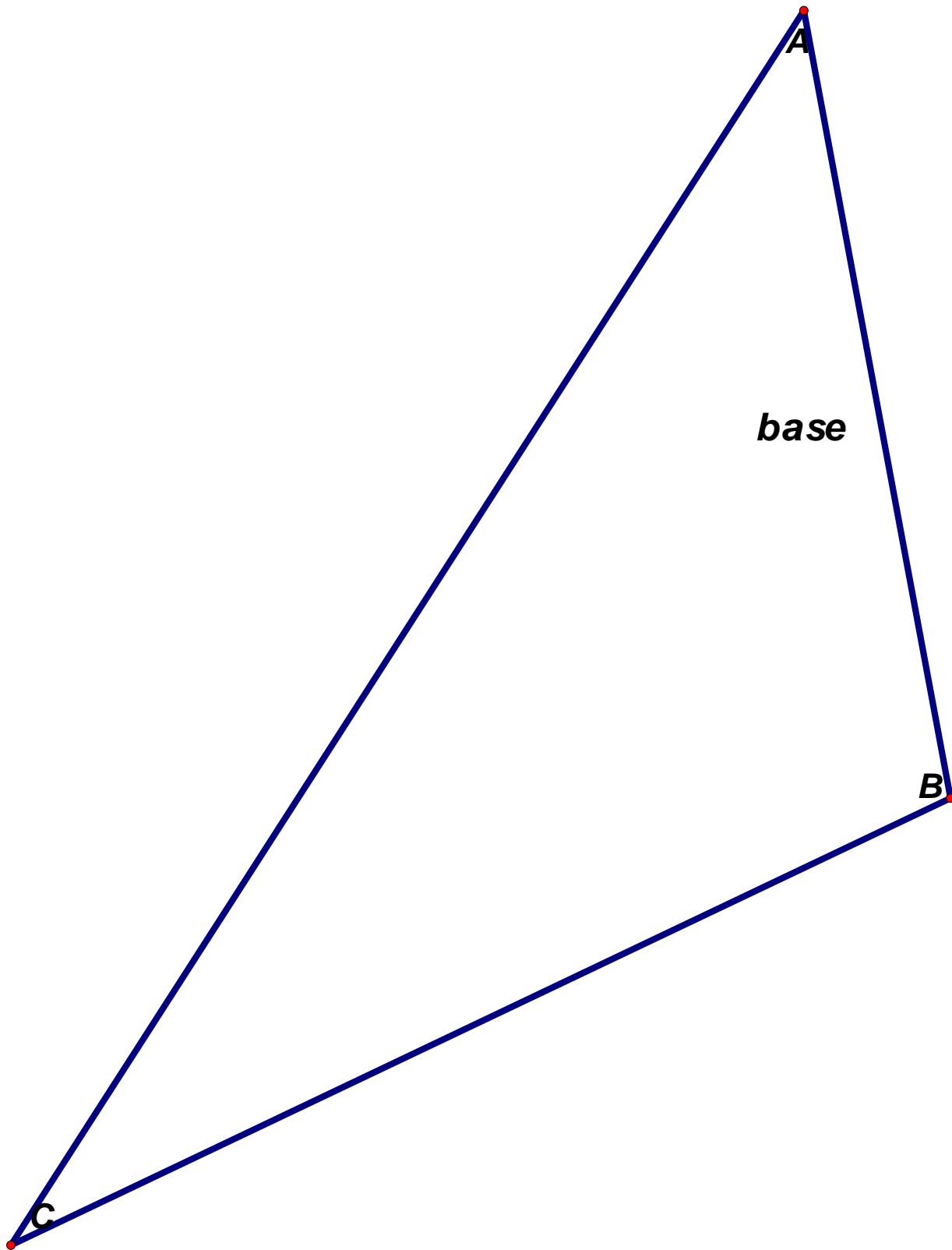
scalene obtuse triangle, base a





EXTENSION:

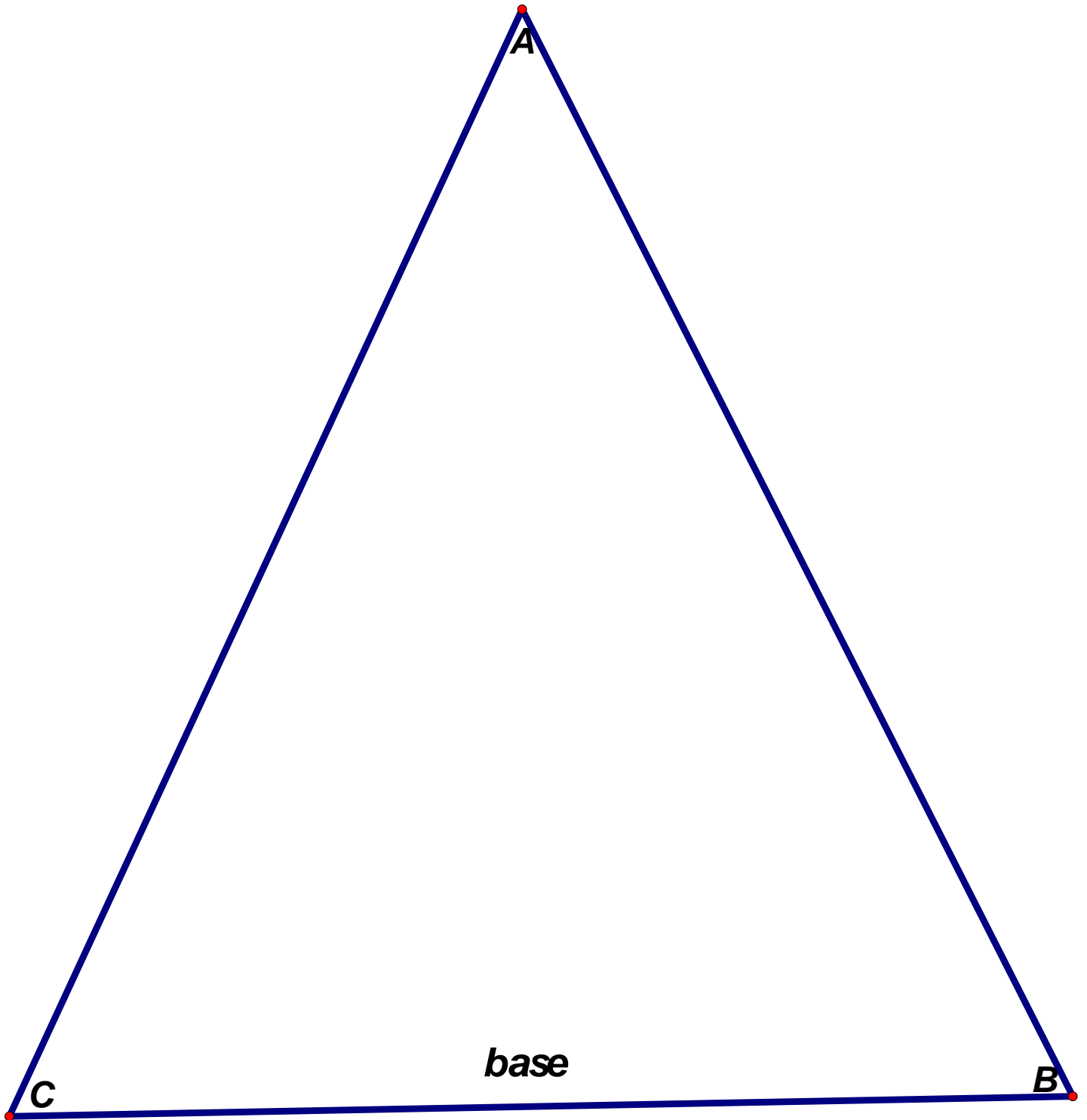
scalene obtuse triangle, base c





EXTENSION:

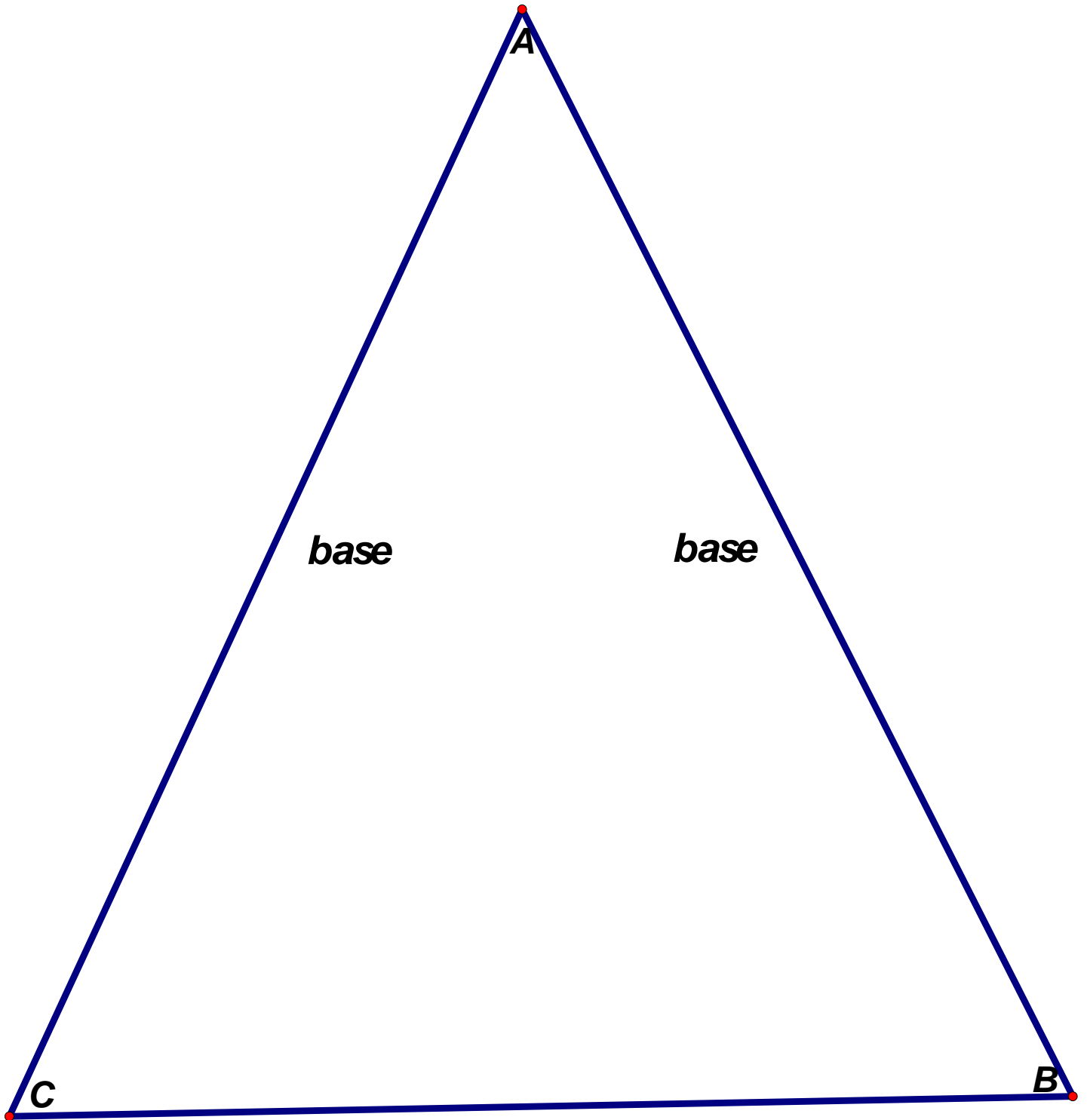
isosceles acute triangle, base a





EXTENSION:

isosceles acute triangle, base b or c





EXTENSION:

equilateral acute triangle, base a , b or c

