Behind the Scenes: Inscribed Angle Theorem Corollary (2)

These directions accompany Behind the Scenes: Inscribed Angle Theorem Corollary (2).

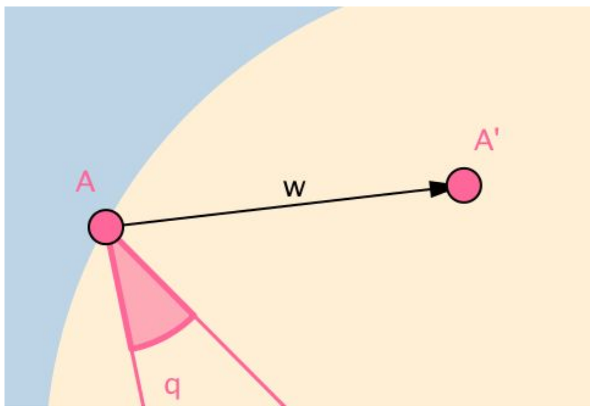
Before you begin, it's important to note that ***A'* is already defined the same way we defined it within [Behind the Scenes: Slider Exercise 1](#).**

That is,

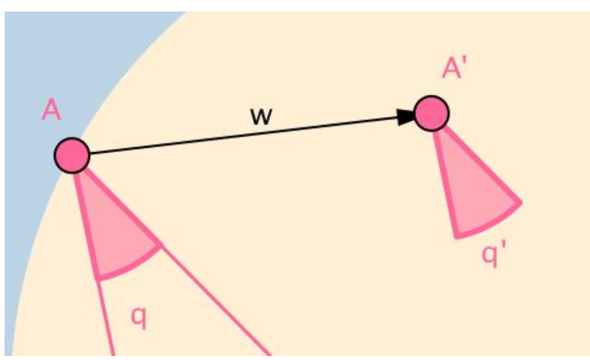
$$A' = \text{Dilate}[A, \text{if}[0<a<=1, 1-a, 0], B]$$

Let's go!

1) Construct a vector with initial point *A* and terminal point *A'*.

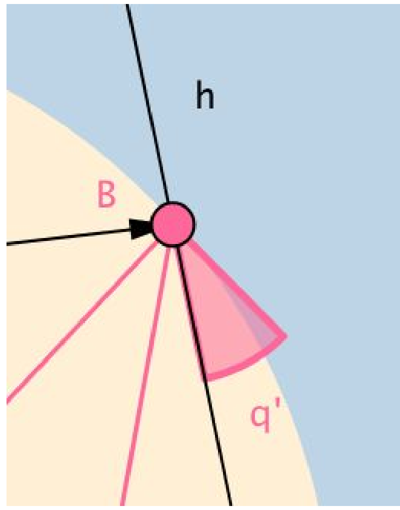


2) Translate sector q by vector w. Note the image of this sector has label q'.
After doing so, hide point A'.

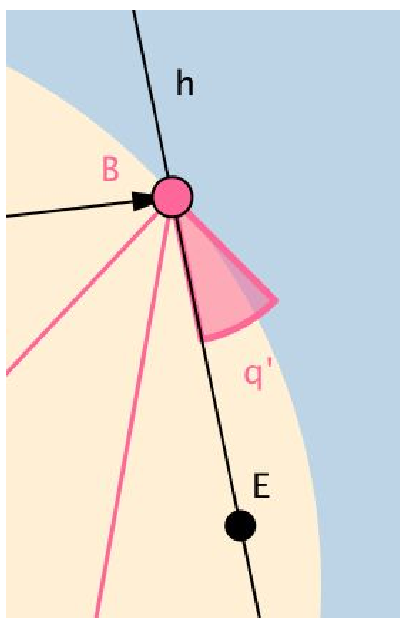


As the slider a moves from a = 0 to a = 1, the applet will translate sector q from point *A* to point *B* (by displaying q'). Next we will place our focus on rotating q' about B through the appropriate angle (as a moves from a = 1 to a = 2.)

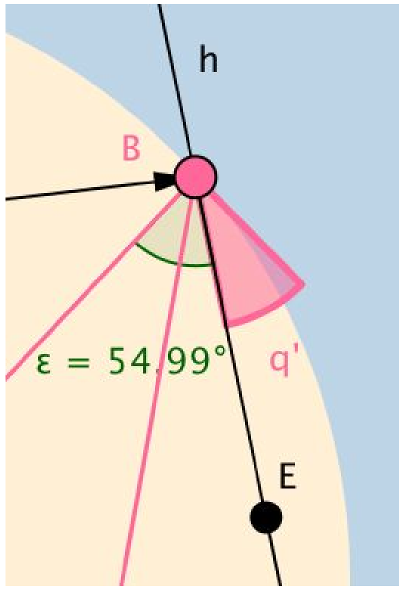
3) Here it is first imperative to determine the angle through which to rotate q’ about B. To do this, **start by constructing a line through *B* that is parallel to segment f.**



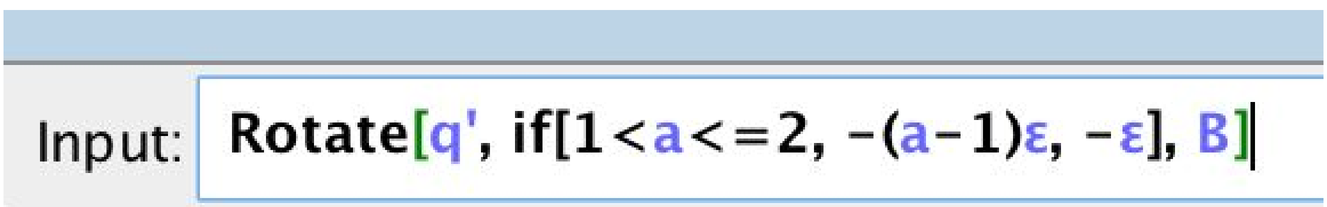
4) Plot a point on this line (parallel to f) you’ve just constructed somewhere “below” B.



5) Use the **Angle** tool to measure and display angle *CBE*.

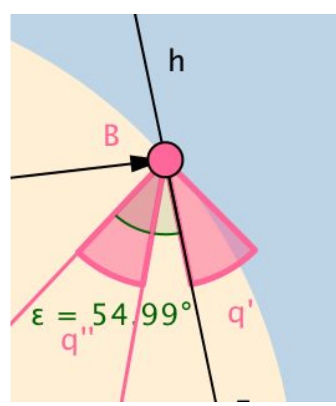


6) In the Input Bar, type this:



Note the **negative sign** in the **then** and **else** slots due to the **clockwise rotation.**
You could also achieve the same effect w/**positive signs** and **replacing** ε **with** $(2pi - \varepsilon)$**.**

7) If you now slide the slider all the way to a = 2, you will find q'' (rotation of q' as defined above) to rotate perfectly into the other inscribed angle with vertex B.



7) **Final Touches:**

Vector w: hide object (if you prefer)

Sector q' : ' Condition to Show Object: 0<a<=1.

Sector q'' Condition to Show Object: a > 1

Angle ε Hide Object

You can hide all labels of all objects if you prefer.

8) **That's it!**
For more illustrations without words, click here.