

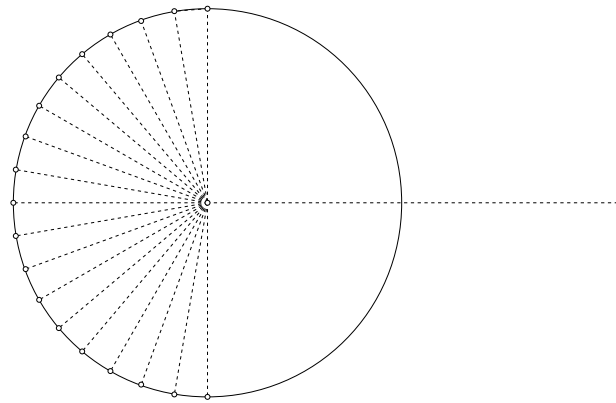
A CAUSTIC CURVE

A caustic curve is one 'stitched' by rays reflected from another curve. The instructions below describe how to create such a curve.

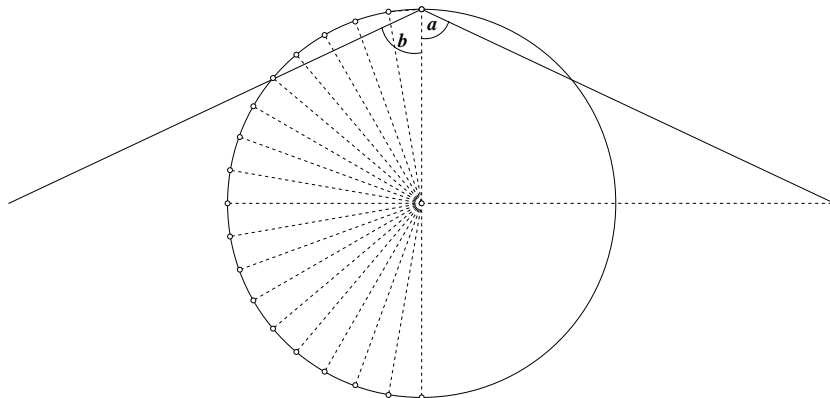
1. Construct a large circle by drawing two semi-circles using Geo-Pro's protractor.

Draw a circle using Geo-Pro's protractor and mark points at 10° intervals on one side as shown. Draw a small dot outside the circle, directly 'east' of the centre of the circle.

2. Mark the centre of the circle and draw (in pencil preferably) a radius of the circle to meet each circumference point.



3. Draw a ray from the point outside the circle to one on the circumference. Use Geo-Pro's protractor to measure angles and reflect the ray from the circle so the angles marked *a* and *b* are equal.



4. Repeat step 3 for the other circumference points, measuring angles from the other pencilled radius lines. Finally, erase each radius. The remaining lines should 'stitch' a caustic curve.

Extension.

Investigate the caustic curve formed with the outside point in a different position.

Answers
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