High School Algebra Playlist: Working with Inscribed and Circumscribed Circles of a Triangle

Aligns with CCSS.Math.Content.HSG.C.A.3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.

Related Standards

- CCSS.Math.Content.HSG.C.A.2: Identify and describe relationships among inscribed angles, radii, and chords. *Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.*

Objectives

In this module, you will learn and practice the following skills:

- construct the inscribed and circumscribed circles of a triangle

- prove properties for a quadrilateral inscribed in a circle

Let's get started!

Key Terms

- An **inscribed circle** is the circle that fits inside a triangle so that the sides are tangent to the circle.

- A **circumscribed circle** is the circle that contains the three vertices of the triangle.

Working with Inscribed and Circumscribed Circles of a Triangle

(CCSS.Math.Content.HSG.C.A.3)

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If your students…

Confuse the incenter and circumcenter:

Remind them of the built-in mnemonics. The **in**scribed circle has its center at the **in**center; the **circum**scribed circle has its center at the **circum**center.

Have trouble with the constructions:

WATCH: **Construct a circle inscribing a triangle**

https://www.opened.com/video/constructing-circle-inscribing-triangle/637640

WATCH: **Inscribed and Circumscribed Circles of Triangles**

http://www.ck12.org/geometry/Inscribed-and-Circumscribed-Circles-of-Triangles/lesson/Inscribed-and-Circumscribed-Circles-of-Triangles/

WATCH: **Construct circumscribing circle**

https://www.khanacademy.org/math/geometry/geometric-constructions/circum-in-circles/v/constructing-circumscribing-circle

Confuse the points of concurrency of a triangle:

One of the ways to distinguish the points of concurrency is to see how they change location as the triangle changes shape:

WATCH: **Euler's line proof**

https://www.khanacademy.org/math/geometry/triangle-properties/triangle_property_review/v/euler-s-line-proof

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