High School Functions Playlist: The Unit Circle and Special Angles

Aligns with *CCSS.MATH.CONTENT.HSF.TF.A.3*: Use special triangles to determine geometrically the values of sine, cosine, and tangent for π/3, π/4, and π/6, and use the unit circle to express the value of sine, cosine, and tangent for π – x, π + x, and 2π – x in terms of their value for x, where x is any real number.

Related Standards

- *CCSS.MATH.CONTENT.HSF.TF.A.4:* Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.

Objectives

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

- Use special triangles to determine geometrically the values of sine, cosine, and tangent for $\pi/3$, $\pi/4$, and $\pi/6$

- Use the unit circle to express the value of sine, cosine, and tangent for $\pi - x$, $\pi + x$, and $2\pi - x$ in terms of their value for x, where x is any real number

Let's get started!

Key Terms

- The special angles of the unit circle are those angles with measures of $\pm 30°$, $\pm 45°$, or $\pm 90°$ degrees, i.e. $\pm\pi/6$, $\pm\pi/4$, or $\pm\pi/3$ radians, with the positive or negative x-axis.

Connections

- https://openstaxcollege.org/textbooks/algebra-and-trigonometry; section 7.3

- www.ck12.org/book/CK-12-Trigonometry-Second-Edition; sections 2.3