Algebra 2 w/ Trig

10.3 Verify Trigonometric Identities

Warm-Up:

**Identify the trigonometric function equivalent to the given function.**

1. 2. 3. 4.

5. You are in an airplane that takes off at a 10º angle and travels at a rate of 250 feet per second. About how long does it take the plane to reach an altitude of 15,000 feet?

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Example 1: Find Trigonometric Values

**Given that and , find the values of the other five trigonometric functions of .**

Example 2: Simplify a Trigonometric Expression

**Simplify the expression** .

Example 3: Simplify a Trigonometric Expression

**Simplify the expression**

YOU TRY:

**Find the values of the other five trigonometric functions of .**

1. ,  **2.**

**Simplify the expression.**

 **4.** **5.**

Example 4: Verify a Trigonometric Identity

Verify the identity

Example 5: Verify a Real-Life (what?!) Trigonometric Identity

A vertical *gnomon* (the part of a sundial that projects a shadow) has height *h*. The length *s* of the shadow cast by the gnomon when the angle of the sun above the horizon is can be modeled by the equation below. Show that the equation is equivalent to .

YOU TRY:

**Verify the identity.**

**6.** **7.**

**8.** **9.**

KEEP GOING:

 **1**. Given that , and find the values of and

1. The population *b*1 of bacteria in a culture is dependent on the population *b*2 of another bacteria in the culture and can be modeled by the function . Simplify to show that the equation is equivalent to .

Hw: Section 10.3 p. 631 #3-13 all