

Name _____ Date _____ Period _____

Secondary 2 Honors - Trigonometry Unit

Day 3 Homework

Find the exact and reduced value of each trig ratio.

1. Find $\tan\theta$ if $\sin\theta = \frac{\sqrt{15}}{4}$

2. Find $\cos\theta$ if $\tan\theta = \frac{4}{3}$

3. Find $\sin\theta$ if $\tan\theta = \frac{5}{12}$

4. Find $\tan\theta$ if $\cos\theta = \frac{\sqrt{11}}{6}$

Trig Identities

Simplify each of the following trig identities as much as possible. You may need to use one or both of our trig identities in each question. (Tangent Identity or Pythagorean Identity)

5. $3(1 - \cos^2\theta) + 3\cos^2\theta$

6. $\frac{1 - \cos^2\theta}{1 - \sin^2\theta}$

7. $\frac{\tan\theta}{\sin\theta}$

8. $3 \cdot \frac{\sin\theta}{\tan\theta}$

Use identities to simplify the following expressions.

9. $\frac{\sin^2\theta + \cos^2\theta}{\tan\theta}$

10. $\tan^2\theta \cdot \sin^2\theta + \tan^2\theta \cdot \cos^2\theta$

11. Gao is standing on a hotel balcony. He looks down at an angle of θ and sees his friend Alysha. The distance from Gao to Alysha is 125 feet. If Alysha is standing 35 feet from the base of the building, find $\sin\theta$. Draw a picture AND show your work.

12. Prove or Disprove the following identity by manipulating the equation. Show each step please!

$$\sin^2\theta + 1 = 2 - \cos^2\theta$$

13. Give an example of an impossible values for $\sin X$.

Simplify the following radical expressions.

14. $\sqrt{32x^3}$

15. $\sqrt[3]{54y^6}$