

Pre-Calculus – Day 28

Formative Ticket

Simplifying Rational Expression

Verifying Trigonometric Identities

In Exercises 1-6, use the cofunction identities to fill in the blanks.

1. $\sin 60^\circ = \cos$ _____

4. $\cot A = \tan$ _____

2. $\sin 45^\circ = \cos$ _____

5. $\csc 30^\circ = \sec$ _____

3. $\cos x = \sin$ _____

6. $\sec B = \csc$ _____

In 7 – 9, simplify each rational expression.

7. $\frac{\sin x \csc x}{\sin x \csc x}$

8. $\frac{\tan x \cot x}{\tan x \cot x}$

9. $\frac{\csc x}{\cot x}$

In 10 – 15, Verify each of the trigonometric identities.

10. $(\sin\theta + \cos\theta)^2 + (\sin\theta - \cos\theta)^2 = 2$

11. $\frac{\sec(-x) \cot x}{\csc(-x)} = -1$

12. $\frac{1 + \sec^2\theta}{\sec^2\theta} = 1 + \cos^2\theta$

13. $\frac{\sin\theta}{\cos\theta} + \frac{\cos\theta}{\sin\theta} = \frac{1}{\cos\theta\sin\theta}$

14. $\sec^2\theta - \sin^2\theta\sec^2\theta = 1$

15. $\frac{\sin^2\theta - 2\sin\theta + 1}{\sin\theta - 1} = \sin\theta - 1$