1. Verify the identity as either invalid or valid.

$\sqrt{sin^{2}t+cos^{2}t}$ = sin t + cos t

1. Verify the identity as either invalid or valid.

3 cos2 θ + cos θ – 2 = 0.

1. Make the trig substitution x = a sec θ for 0 < θ < $\frac{π}{2 }$ and a>0. Use fundamental identities to simplify the resulting expression. x3 $\sqrt{x^{2}-a^{2}}$.
2. Find all solutions of the equation (cos θ – 1)(sin θ + 1) = 0.
3. Find all solutions of the equation that are in the interval [0, 2π).

sin2x + sinx - 3 = 0

1. If α and β are acute angles such that cos α = $\frac{4}{5}$ and tan β = $\frac{8}{15}$ , find sin (α + β).
2. If tan α = $-\frac{7}{24} $and cot β = $\frac{3}{4} $for a second-quadrant angle α and a third-quadrant angle β, find

tan (α – β).

1. Indicate whether the reduction formula is correct or incorrect.

cos (θ – π) = - cos θ

1. Indicate whether the following equation is an identity.

cos (θ + $\frac{π}{4}$ ) = $\frac{\sqrt{2}}{2}$ (cos θ – sin θ)

1. Use an addition or subtraction formula to find the solutions of the equation that are in the interval

[0, π).

cos 8t cos 5t = - sin 8t sin 5t