**Express as a sum or difference.**

1. sin 7t sin 3t 2. cos 6u cos (-4u) 3. 2 sin 9θ cos 3θ 4. 3 cos x sin 2x

**Express as a product.**

5. sin 6θ + sin 2θ 6. cos 5x - cos 3x 7. sin 3t - sin 7t 8. cos x + cos 2x

**Verify the identity.**

9. $\frac{sin 4t+sin 6t}{cos 4t-cos 6t}=cot t$ 10. $\frac{sin θ+sin 3θ}{cos θ+cos 3θ}=tan 2θ$ 11. $\frac{\sin(u+\sin(v))}{\cos(u+\cos(v))}=\tan(\frac{1}{2})(u+v)$

**Use sum-to-product formulas to find the solutions of the equation.**

12. sin 5t + sin 3t = 0 13. cos x = cos 3x 14. cos 3x + cos 5x = cos x

**Graph the function f for 0 ≤ x ≤ 2π. Use a sum-to-product formula to help find the x-intercepts.**

15. f(x) = cos x + cos 3x

