**Homework 4 (Review of Sessions 1-4)**

**Part 1: Graphing Basics**

1. Identify the amplitude of each function:
   * a) y=5sinx
   * b) y=−3cosx
   * c) y=(1/4)sinx
2. Sketch one cycle of y=2cosx. Clearly label the maximum and minimum y-values.

**Part 2: Trigonometry Review (Unit Circle, Functions, Identities)**

4. Find the exact value of all six trigonometric functions (sin,cos,tan,csc,sec,cot) for the angle θ=225∘.

5. Find the exact value of all six trigonometric functions for the angle θ=611π​. (hint: remember coterminal angles)

6. If sin(θ)=53​ and θ is in Quadrant II, find the values of cos(θ) and tan(θ).

7. Simplify the expression: tan(x)cos(x)+sin(2x)csc(x). (Hint: Rewrite in terms of sinx and cosx where helpful).

8. Verify the identity: 1−sin(2θ)=sec(θ)cos(θ)​.

9. Convert 160∘ to radians.

10. Convert 57π​ radians to degrees.

11. Find one positive and one negative coterminal angle for θ=−45∘.

**Part 3: Algebra Review**

12. Simplify the expression: (2x^2−5x+3)−(x^2−3x−4)+3(x−1).

14. Solve the quadratic equation by factoring: x^2−8x+15=0.

15. Solve for x: ∣2x−5∣=11.