**Homework 6**

**Part 1: Identifying All Four Characteristics**

1. For each function, identify the Amplitude, Period, Phase Shift, and Vertical Shift.
   * a) y=10cos(x−π/2)+3
   * b) y=−2sin(4x+8π)−5 (Hint: Factor out the 4 first)
   * c) y=21​sin(πx−π)+1 (Hint: Factor)

**Part 2: Sketching Graphs**

2. Sketch one full cycle of the function y=2sin(x−π/4). Label the key points (start, peak, middle, trough, end).

3. Sketch one full cycle of the function y=cos(2x)+3. Label the midline, max, and min values.

4. Sketch one full cycle of the function y=4cos(21​(x+π))−1.

**Part 3: Review**

5. If sinθ=−8/17 and θ is in Quadrant III, find cotθ.

6. Verify the identity: 1+cotx1+tanx​=tanx.