**Openers #7 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

*Each day when you come into class, there will be a problem projected for you to complete. Find the appropriate box to complete the problem in and work on it when you arrive.*

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| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 7-1  Verify the identities.   1. (tan u + cot u) (cos u + sin u) = csc u + sec u 2. tan2α – sin2α = tan2αsin2α |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 7-2-1  Find all solutions of the equations.   1. csc γ = 2. cot θ + 1 = 0 3. 4sin2x – 3 = 0 |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 7-2-2  Find the solutions that are in the interval [0, 2π)   1. cot2θ – cotθ = 0 2. 2cos2t + 3cost + 1 = 0 |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_**  **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_**  **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_**  **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 7-3  Express sin 89⁰41’ as a cofunction of a complementary angle.  Find the exact values.   1. sin b) sin   Express as a trig function.   1. cos 13⁰cos 50⁰ - sin 13⁰sin50⁰ b) If α and β are acute angles such that csc   α = and cot β = , find sin( α + β).  Verify the reduction formula.  sin (x + ) = cos x  7-4  Find the exact values of sin 2θ, cos 2θ, and tan 2θ for sin θ = 270⁰ < θ < 360⁰    Find the exact values of sin θ/2, cos θ/2, and tan θ/2 for csc θ = -90⁰ < θ < 0⁰  Use the half-angle formula to find the exact values of cos 165⁰.  Find the solutions of cos t – sin 2t = 0 that are in the interval [0, 2π).  7-5  Express 5 cos u cos 5u as a sum or difference.  Express cos 5t + cos 6t as a product.  7-5 continued…  Use sum-to-product formulas to find the solutions of the equations.   1. sin t + sin 3t = sin 2t 2. cos 4x – cos 3x = 0   7-6  Find the exact value of the expression.   1. sin-1 ( ) b) arcsin 0 c) arctan(tan) d) tan(cos-1 0) e) sin(tan-1)   f) sin(2tan-1 ) g) cos(sin-1+ tan-1) h) sec(tan-1)  Write the expression tan(arcos x) as an algebraic expression in x for x > 0. |