Precal 5.1: Verifying Trig Identities

GOAL: Show one side can be simplified so it is identical to the other side.

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| **Reciprocal Identities** | | **Quotient Identities** | **Pythagorean Identities** |
|  |  | *Hint: only use these if tangent and cotangent are mixed with other trig functions* | Solve each of these for the other trig function: |

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| **Try:** | | | **Hints:** |
| * Changing to sines/cosines * Combining fractions * Separating fractions * Using formula (esp with 1 or trig²x) | * Factoring (try changing to variables first) * Simplifying parentheses * SOMETHING!! | | * Copy carefully! * Start with the most complicated side * Don’t undo what you just did * Only deal with one side |
| 1. sec x cot x = csc x  2. sinθ (cot θ + tanθ) = sec θ  3. cos x – cos x sin² x = cos³ x  4. sec θ + tan θ =  5.  6. csc x + cot x =  7. csc θ sin θ – sin² θ = cos² θ  8. (csc θ + cotθ)(cscθ – cot θ) = 1  9. sinθ csc θ = 1  10.  11. cos² x − sin²x = 1 – 2sin²x | | 12. cot²y(sec²y – 1) = 1  13.  14. cosθ(tanθ + cot θ) = csc θ  15. (sec θ – 1)(sec θ + 1) = tan²θ  16. (sinθ + cosθ)² + (sinθ – cosθ)² = 2  17. tan² x + 6 = sec² x + 5  18. tan θ cot θ – cos² θ = sin² θ  19.  20.  21. sec4θ – sec²θ = tan4θ +tan²θ  22. cos²θ(1 + tan²θ) = 1 | If you feel overwhelmed, take a moment to enjoy this pig with a flower. |