

## Helpful hints for identities in textbook: 7.1 (part2) → #49, 57, 58, 62, 64, 66, 71, 73, 80, 83

### VERIFY

→keep simpler side “as is” (right side)

→transform/rewrite/simplify ONLY THE LEFT SIDE to show that it equals the right side.

49. rewrite in terms of sin/cos, get common denominator, combine fractions, substitute Pythagorean identity, use reciprocal identity
57. factor difference of squares, substitute Pythagorean identity
58. substitute Pythagorean identity, rewrite in terms of sin/cos, distribute and cancel, substitute Pythagorean identity
62. substitute Pythagorean identity, split fraction into two terms (keep common denominator for each term), use reciprocal identity
64. rewrite in terms of sin/cos; in the **denominator** →get common denominator and combine fractions; flip and multiply since dividing by a fraction is the same as multiplying by its reciprocal; cancel
66. rewrite in terms of sin/cos; →in the **numerator**: combine fractions as is; →in the **denominator**: get common denominator and combine fractions; Flip and multiply since dividing by a fraction is the same as multiplying by its reciprocal; Cancel then use quotient identity
71. get common denominator and use FOIL; combine fractions, add like terms in numerator; substitute Pythagorean identity in denom
73. get common denominator (use parentheses around all parts when multiplying, use FOIL), combine fractions, add like terms in numerator; substitute Pythagorean identity in denominator, rewrite  $\cos^2 x$  as  $\cos x \cdot \cos x$ , push multiplier to the front, rewrite using quotient identity and reciprocal identity
80. multiply given fraction by  $\frac{1+\cos A}{1+\cos A}$  then rewrite denominator using a Pythagorean identity and cancel like terms; now rewrite  $\cot A$  using a quotient identity, combine fractions since there is a common denom, add like terms, rewrite using reciprocal identity
83. multiply given fraction by  $\frac{1+\sin \theta}{1+\sin \theta}$  (using FOIL in denominator); rewrite denominator using a Pythagorean identity then cancel, split fraction into two terms (keep common denominator for each term), rewrite using reciprocal identity and quotient identity