

Ch.7 review exercises: book work → #1-5, 9-17odd, 31-33, 35

VERIFY #3-25 (hints for possible solutions)

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

→transform/rewrite/simplify ONLY THE LEFT SIDE until both sides are equal.

1. rewrite in terms of $\sin\theta$ & $\cos\theta$, distribute $\sin\theta$, cancel, get common denominator, substitute Pythagorean identity, rewrite using a reciprocal identity
2. multiply using FOIL, rewrite using Pythagorean identity
3. substitute Pythagorean identity for \cos^2x using parentheses, distribute $\csc x$, cancel like terms, rewrite $\csc x$, cancel
4. substitute Pythagorean identity, rewrite using reciprocal identity, substitute Pythagorean identity
5. split apart fraction into two terms (keep common denominator for each term); rewrite first term using quotient identity, rewrite second term in terms of $\sin\theta$ & $\cos\theta$, flip and multiply by term in denominator, then cancel and rewrite using reciprocal identity
9. rewrite in terms of $\sin x$ & $\cos x$, cancel like terms, substitute Pythagorean identity
11. substitute a double-angle identity in numerator, substitute a double-angle identity in denominator (choosing the option that will cancel the + 1), then cancel like terms and use a quotient identity
13. substitute a half-angle identity, split apart fraction into two terms (put parentheses around these two terms, then show how you can distribute the subtraction sign and cancel)
15. substitute two double-angle identities (choosing the option that will give you like terms); **first term** → cancel like parts, **second term** → split apart fraction, cancel, use quotient identity
17. rewrite in terms $\sin x$ & $\cos x$; in the **denominator** → combine fractions then flip and multiply so you can distribute through the numerator and cancel like terms; combine fractions and substitute a half-angle identity

Solve for x by rewriting and/or factoriong #31-33, 35 → $0 \leq x < 2\pi$

31. factor/rewrite using GCF, then apply zero product property to find **two solutions**
32. factor/rewrite using GCF, then apply zero product property to find **four solutions**
33. factor/rewrite using FOIL method, then apply zero product property to find **two solutions**
35. factor/rewrite using FOIL method, then apply zero product property to find **two solutions**

Check answers for #32: $0 \quad \pi \quad \frac{\pi}{6} \quad \frac{5\pi}{6}$

REMINDERS FOR THE TEST:

- sum/difference, half-angle, double-angle identities will be provided
- memorize the remaining identities so you can fill in the blanks
- know your unit circle
- pay attention to positive and negative signs for the given quadrant
- always start a problem by first writing the identity equation, then determine if you need to draw a diagram and find other side ratios
- if substituting after a negative sign, use parentheses so you can distribute properly
- clearly show all steps, demonstrate your knowledge of identities and mathematical operations/concepts