Chapter 14 Review C

1 – 5 , $270^\circ < A < 360^\circ$. If sin A = $\frac{-15}{17}$, find

1. tan 2A
2. cos 2A
3. cos $\frac{A}{2}$
4. sin $\frac{A}{2}$
5. tan $\frac{A}{2}$

6. Simplify completely: $\sin\left(\frac{\pi}{6}+x\right)-\sin\left(\frac{\pi}{6}-x\right)$

7. Evaluate $\tan\left(\frac{5\pi}{4}+\theta\right)$ when $\tan\theta=\frac{3}{4}$

8. sin $\alpha=\frac{3}{5}$ and sin $\beta=\frac{24}{25}$, $0<\alpha<\frac{\pi}{2}<\beta<\pi$. Find $\cos\left(\alpha-\beta\right)$

9 . Simplify $\frac{3}{5}\sin 4x\cos 4x$

10. Use the expansion formula to find the exact value of cos 105°

11. Use the half angle formula to find the exact value of sin 165°

Simplify:

12. $\sin\left(x-5\pi\right)$

13. $\frac{\cos^2 x}{1-\sin x}$

14. $\frac{\tan\frac{7\pi}{9}-\tan\frac{\pi}{9}}{1+\tan\frac{7\pi}{9}\tan\frac{\pi}{9}}$

15. $\cos^4 x-\sin^4 x$

Find the general solution:

16. sin 2x sin x = cos x

Solve for $0^\circ \le x < 360^\circ$

17. $\sin x=\sqrt{3}\cos x$

18. sin 3x cosx + cos 3x sin x = 0

Graph:

19. $y=2-3\sin\pi(x-1)$

20. $y=-1+3\cos 2\left(x-\frac{\pi}{2}\right)$

21. $y=1-2\tan\pi\left(x-\frac{1}{2}\right)$

22. A sinusoidal curve has a max value of (0,1) and a minimum value of (4, -7). Write the sine and cosine equation for this function.

Answers:

1. $\frac{240}{161}$ 2. $\frac{-161}{289}$ 3. $\frac{-5\sqrt{34}}{34}$ 4. $\frac{3\sqrt{34}}{34}$ 5. $\frac{-3}{5}$

6. $\sqrt{3}\sin x$ 7. 7 8. $\frac{44}{125}$ 9. $\frac{3}{10}\sin 8x$ 10. $\frac{\sqrt{2}-\sqrt{6}}{4}$

11. $\frac{\sqrt{2-\sqrt{3}}}{2}$ 12. $-\sin x$ 13. $1+\sin x$ 14. $-\sqrt{3}$

15. $\cos 2x$ 16. $\frac{\pi}{2}+n\pi;\frac{\pi}{4}+\frac{n\pi}{2}$

17. $60^\circ;240^\circ$ 18. $45^\circ;90^\circ;135^\circ;180^\circ;225^\circ;270^\circ;315^\circ$

19. (0,2); (.5, 5); (1, 2); (1.5, -1); (2, 2)
AOW: y = 2
Phase Shift: right 1

20. (0, -4); $\left(\frac{\pi}{4},-1\right);\left(\frac{\pi}{2},2\right);\left(\frac{3\pi}{4},-1\right);(\pi,-4)$
AOW: y = -1
PS: right $\frac{\pi}{2}$

21. (1/4, 3); (1/2 , 1); (3/4, -1)
Asymptotes: x = 0; x = 1

22. $y=4\cos\frac{\pi}{4}x-3$
$y=4\sin\left(\frac{\pi}{4}(x+2)\right)-3$