

CHAPTER 5 PRACTICE TEST

ASSG# _____

NAME: (Key) DATE: _____ PER: _____

Show all the work clearly on a separate paper and attach to this worksheet.

Use a sum or difference identity to find the exact value of:

- 1) $\sin 255^\circ$ 2) $\cos \frac{7\pi}{12}$ 3) $\tan \frac{5\pi}{12}$

Use a half-angle identity to find the exact value of:

- 4) $\cos \frac{13\pi}{12}$ 5) $\tan 165^\circ$ 6) $\sin 22.5^\circ$

Solve the following equations over the interval $0 \leq x \leq 2\pi$ or $[0, 2\pi]$

- 7) $4\sin^2 x + 4\sqrt{2}\cos x - 6 = 0$ 8) $10\sin 3x = 0$ ↑

Solve the following equation over the interval $0 \leq x < 2\pi$ or $[0, 2\pi)$

- 9) $2\sin^2 x + \sin x = 2$ 10) $\sin x \cot x = 4 \cot x$

Solve the following equation over the interval $0 \leq x < \pi$ or $[0, \pi)$!

- 11) $\cos 2x + \sin x = 0$

Solve the following equations for all real values of x:

- 12) $2\cos^2 x - 5\cos x + 2 = 0$

(15-20) Simplify:

13) $\frac{\tan^2 \theta \csc^2 \theta - 1}{\tan^2 \theta}$

14) $\frac{\sec \theta \tan \theta}{\sin \theta}$

16) $\sin(2\pi + \theta)$

18) $\frac{\tan^2 \theta + 1}{\tan^2 \theta}$

20) If $\sec \theta = -\frac{25}{24}$, and $\frac{\pi}{2} < \theta < \pi$, find the exact value of $\sin 2\theta$

21) If $\cos \alpha = \frac{3}{5}$, $\sin \beta = -\frac{5}{13}$, $0 < \alpha < \frac{\pi}{2}$, and $\pi < \beta < \frac{3\pi}{2}$, find the value of:

- a) $\sin(\alpha - \beta)$ b) $\cos(\alpha - \beta)$ c) $\tan(\alpha - \beta)$

22) If $\cos x = \frac{4}{5}$ and $270^\circ < x < 360^\circ$, find the exact value of $\sin 2x$.

23) If $\csc x = -\frac{5}{3}$, and θ has its terminal side in Quadrant III, find the exact value of $\tan 2\theta$.

24) If $\sec \theta = -\frac{25}{24}$, and $180^\circ < \theta < 270^\circ$, find $\sin 2\theta$

25) Write below all the expressions equivalent to $\cos 2\theta$.

1.	$\frac{-\sqrt{2} - \sqrt{6}}{4}$
2.	$\frac{\sqrt{2} - \sqrt{6}}{4}$
3.	$2 + \sqrt{3}$
4.	$-\frac{\sqrt{2} + \sqrt{3}}{2}$
5.	$-2 + \sqrt{3}$
6.	$\frac{\sqrt{2} - \sqrt{2}}{2}$
7.	$x = \frac{\pi}{4}, \frac{7\pi}{4}$
8.	$x = 0, \frac{\pi}{3}, \frac{2\pi}{3}, \pi, \frac{4\pi}{3}, \frac{5\pi}{3}, 2\pi$
9.	$x \approx .8959, x \approx 2.2457$
10.	$x = \frac{\pi}{2}, \frac{3\pi}{2}$
11.	$x = \frac{\pi}{2}$
12.	$x \approx \frac{\pi}{3} + 2\pi k \text{ \& } \frac{5\pi}{3} + 2\pi k, (k \text{ is an int.})$
13.	1
14.	$\sec^2 \theta$
15.	$2 \cot^2 x$
16.	$\sin \theta$
17.	$\csc \theta$
18.	$\csc^2 \theta$
19.	$2 \sec x$
20.	$-\frac{336}{625}$
21. a)	$-\frac{33}{65}$
b)	$-\frac{56}{65}$
c)	$\frac{33}{56}$
22)	$-\frac{24}{25}$
23)	$\frac{24}{7}$
24)	$\frac{336}{625}$
25)	$\star \cos^2 \theta - \sin^2 \theta$ $\star 1 - 2\sin^2 \theta$ $\star 2\cos^2 \theta - 1$

Don't forget to practice proving identities from section 5.1