Ch. 7 Identities Additional Practice NAME: PER:

CLEARLY SHOW ALL STEPS!!

1) Express $\frac{1}{1+\cot^2\theta}$ as a single trigonometric function.

2) Express $\csc^2\theta - \cot^2\theta - \sin^2\theta$ as a single trigonometric function.

3) Express $\sec\theta + \sec\theta\tan^2\theta$ as a single trigonometric function.

4) Express $\frac{1}{\tan^2\theta\cos^2\theta}$ as a single trigonometric function.

5) Transform $(1 + \sin\theta)(1 - \sin\theta)$ into a single trigonometric function.

6) Transform $\frac{\sec\theta}{\sin\theta} - \frac{\sin\theta}{\cos\theta}$ into a single trigonometric function.

7) Which expression is equivalent to sin (42°) cos (48°) + cos (42°) sin (48°)?
A) 0 C) 1
B) cos 6° D) sin 6°

8) What is the value of sin 210° cos 30° - cos 210° sin 30°?
A) 180 C) 0
B) -1 D) 1

9) The expression cos 70° cos 10° + sin 70° sin 10° is equivalent to
A) sin 80° C) sin 60°
B) cos 80° D) cos 60°

10) The expression cos 80° cos 20° - sin 80° sin 20° is equivalent to
A) sin 60° C) sin 100°
B) cos 100° D) cos 60°

11) The expression cos 16° cos 164° - sin 16° sin 164° is equivalent to
A) 0 B) -1 C) $\frac{\sqrt{3}}{2}$ D) $\frac{1}{2}$

12) The expression sin (180° - x) is equivalent to
A) -cos x C) cos x
B) -sin x D) sin x

13) Find the exact value of cos 53° cos 8° + sin 53° sin 8°.

14) If A and B are *both* acute angles, sin A = $\frac{5}{13}$ and sin B = $\frac{4}{5}$ then sin (A - B) is

15) If sin A= $\frac{3}{5}$, sin B= $\frac{2}{3}$, and ∠A and ∠B are acute angles, what is the value of cos (A - B)?

16) If tan A = 8 and tan B = $\frac{1}{2}$ what is the value of tan (A + B)?

17) If sec x = $\frac{\sqrt{5}}{2}$ with angle x in quadrant *IV* and tan$y$ = - $\frac{1}{3}$ with angle y in quadrant *II*, find the value of sin (x - y).

18) Express cos (90° - A) in terms of a function of A.

19) The expression sin A cos A + sin 2A is equivalent to
A) cos A + 2 sin 2A
B) cos A + 2 sin A
C) 3 sin A cos A
D) sin A (cos A + sin A)

20) The expression $\frac{\sin 2x}{\sin(-x)}$ is equivalent to
A) 2 cos x C) -2 sin x
B) 2 sin x D) -2 cos x

21) The expression 2 $\sin^2$ t + cos (2t) is equivalent to
A) 1 C) 2
B) -$\sin^2$ t D) $\sin^2$ t

22) Cos 2A + 1 is equivalent to
A) 2 $\cos^2$A C) 2 $\sin^2$A
B) 2 sin A cos A + 1 D) $\cos^2$A + 1

23) If sin A = $\frac{3}{5}$, find cos 2A.

24) If A is a positive acute angle and sin A = $\frac{\sqrt{7}}{3}$, find the value of sin 2A.

25) If x is an angle in quadrant *II* and cos x = $-\frac{3}{5}$, find the value of $\sin\left(\frac{x}{2}\right)$

26) If cos t = $\frac{4}{5}$, find the positive value of $\tan\frac{t}{2}$.

27) If A is a positive acute angle and tan A = $\frac{5}{12}$, find the value of $\cos\frac{A}{2}$.

28) Given that sec θ = $-\frac{4}{3}$ and θ is in Quadrant II, find $\sin 2\theta$, $\cos 2\theta$, and $\tan 2\theta$.

CHECK ANSWERS:

sinA	cot θ	$\cos^2\theta$	$\cos^2\theta$	$\csc^2\theta$	$\sin^2\theta$	$\sec^3\theta$	+A	A	B	B	C	C	C	D	D	D
$-\frac{33}{65}$	$-\frac{17}{6}$	$\frac{1}{3}$	$\frac{1}{8}$	$\frac{7}{25}$	$\frac{2\sqrt{5}}{5}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{10}$	$\frac{2\sqrt{14}}{9}$	$\frac{5\sqrt{26}}{26}$	$\frac{4\sqrt{5}+6}{15}$	$\frac{-3\sqrt{7}}{8}$	$-3\sqrt{7}$				