

Name: _____
PC Review sheet for Exam 3 Quarter 3

Date: _____
Ms. Loughran

1. Copy and complete the following table.

θ	0°	30°	45°	60°	90°	180°	270°	360°
Radians								
$\sin \theta$								
$\cos \theta$								
$\tan \theta$								
$\csc \theta$								
$\sec \theta$								
$\cot \theta$								

2. Determine the quadrant in which x lies if

- (a) $\sin x > 0$ and $\cot x < 0$
- (b) $\csc x < 0$ and $\cot x < 0$
- (c) $\sec x > 0$ and $\sin x < 0$
- (d) $\cot x < 0$ and $\sec x < 0$
- (e) $\cot x > 0$ and $\csc x > 0$

3. Express in degrees the angle whose radian measure is:

- (a) $\frac{8\pi}{3}$
- (b) $-\pi$
- (c) $\frac{3\pi}{5}$

4. Express in radian measure the angle whose degree measure is:

- (a) 15°
- (b) -600°
- (c) 124°

5. In which quadrant does an angle of $\frac{3\pi}{4}$ lie? How about $-\frac{3\pi}{4}$?

6. Point P with coordinates $(\frac{1}{2}, \frac{\sqrt{3}}{2})$ lies on the unit circle, find:

- a. $\sin \theta$
- b. $\cos \theta$
- c. $\tan \theta$

7. Express each of the following as a function of a positive acute angle.

- a. $\sin 140^\circ$
- b. $\cos 250^\circ$
- c. $\tan 300^\circ$
- d. $\cos 135^\circ$
- e. $\sin \frac{5\pi}{6}$
- f. $\tan \frac{7\pi}{6}$

8. Find the exact numerical value of each expression.
- $\cot 120^\circ$
 - $\sec 210^\circ$
 - $\tan 240^\circ$
 - $\sec \frac{4\pi}{3}$
 - $\cos (-330^\circ)$
 - $\sin 405^\circ$
9. If $\tan A > 0$ and $(\tan A)(\sin A) > 0$, in what quadrant does $\angle A$ lie?
10. If $\tan A = -\frac{3}{4}$ and $\cos A > 0$, find the values of the remaining trigonometric functions of $\angle A$?
11. If $\tan x = -1$ and x is in Quadrant II, find the values of the remaining trigonometric functions of $\angle x$?
12. If $f(x) = \tan 5x - \sin 2x$, find $f(\frac{\pi}{6})$.
13. Write each given expression in simplest form.
- | | | |
|---|---|---------------------------------------|
| (a) $\csc \theta \sin \theta$ | (b) $\sin \theta \cot \theta$ | (c) $\tan \theta \cos \theta$ |
| (d) $\sec \theta \cot \theta$ | (e) $\sec \theta + \tan \theta$ | (f) $\frac{\sec \theta}{\csc \theta}$ |
| (g) $\csc^2 \theta - \frac{\cot \theta}{\tan \theta}$ | (h) $\sec \theta(1 + \cot \theta) - \csc \theta(1 + \tan \theta)$ | |
14. If $f(x) = -3 \sin 2x$, find the numerical value of $f(\pi)$.
15. If $f(x) = \sec x + \cot \frac{x}{3}$, find $f(\pi)$.
16. Prove that the following is an identity:

$$\frac{\cos \theta \tan \theta + \sin^2 \theta}{1 + \sin \theta} = \sin \theta$$

For 17 – 19, solve for θ in the interval $0^\circ \leq \theta < 360^\circ$.

17. $2\sin\theta - 1 = 0$

18. $3\cos\theta + 1 = 1$

19. $3\tan\theta - 2 = \tan\theta$

For 20 - 22, solve for θ in the interval $0 \leq \theta < 2\pi$.

20. $4(\cos\theta + 1) = 0$

21. $3\cos\theta - \sqrt{3} = \cos\theta$

22. $2(\sin\theta + 1) = \sin\theta + 3$

For 23 - 25, find θ to the nearest degree in the interval $0^\circ \leq \theta < 360^\circ$.

23. $5\cos\theta - 1 = 0$

24. $6\sin\theta + 2 = \sin\theta$

25. $\csc\theta + 8 = 3\csc\theta$