

Name: \_\_\_\_\_

**Math Analysis Trig Review**

**I.) DO NOT USE A CALCULATOR ON THIS SECTION.**

A.) Convert from degrees to radians or radians to degrees:

1.)  $\frac{-5\pi}{3}$                       2.)  $210^\circ$                       3.)  $\frac{11\pi}{6}$                       4.)  $-315^\circ$

B.) Determine the quadrant in which  $\theta$  lies.

5.)  $\theta = 470^\circ$                       6.)  $\theta = \frac{7\pi}{8}$                       7.)  $\theta = -290^\circ$                       8.)  $\theta = \frac{11\pi}{4}$

9.)  $\sec \theta < 0, \sin \theta < 0$                       10.)  $\tan \theta < 0, \csc \theta > 0$

C.) Find the reference angle for each angle:

11.)  $193^\circ$                       12.)  $-300^\circ$                       13.)  $\frac{-5\pi}{4}$                       14.)  $\frac{8\pi}{3}$

D.) Find the exact value of each trig ratio:

15.)  $\sin 120^\circ$                       16.)  $\tan \frac{3\pi}{2}$                       17.)  $\cos \frac{3\pi}{4}$                       18.)  $\csc(-150^\circ)$

19.)  $\cot\left(\frac{-\pi}{3}\right)$                       20.)  $\sec \pi$                       21.)  $\cos 420^\circ$                       22.)  $\tan \frac{7\pi}{6}$

23.)  $\sin \pi$                       24.)  $\csc\left(\frac{-2\pi}{3}\right)$                       25.)  $\cot 0$                       26.)  $\sec \frac{7\pi}{4}$

27.)  $\cos(-270^\circ)$                       28.)  $\tan \frac{8\pi}{3}$                       29.)  $\sin 240^\circ$                       30.)  $\sec \frac{5\pi}{6}$

E.) Set up a right triangle to find the six trig ratios of each:

31.)  $\sin \theta = \frac{2}{3}, \cos \theta = \frac{-\sqrt{5}}{3}$                       32.)  $\cos \theta = \frac{4}{5}, \tan \theta < 0$

33.) The terminal side of  $\theta$  contains  $(-5, -12)$

F.) Solve each equation over the given interval:

- 34.)  $0^\circ \leq \theta \leq 90^\circ$       35.)  $0 \leq \theta \leq \frac{\pi}{2}$       36.)  $0^\circ \leq \theta < 360^\circ$   
 $\cos \theta = \frac{\sqrt{2}}{2}$        $\tan \theta = \frac{\sqrt{3}}{3}$        $\sin \theta = \frac{1}{2}$
- 37.)  $0^\circ \leq \theta < 360^\circ$       38.)  $0 \leq \theta < 2\pi$       39.)  $0 \leq \theta < 2\pi$   
 $\sec \theta = -2$        $\cos \theta = -1$        $\cot \theta = -1$

**II.) USE YOUR CALCULATOR TO SOLVE THESE PROBLEMS. MAKE SURE THE CALCULATOR IS IN THE CORRECT MODE!**

G.) Find each value to 4 decimal places:

- 40.)  $\tan 2.13$       41.)  $\csc(-122^\circ)$       42.)  $\cos 284^\circ$       43.)  $\cot(-1.2)$

H.) Solve each equation over the given interval:

- 44.)  $0^\circ \leq \theta \leq 90^\circ$       45.)  $0 \leq \theta \leq \frac{\pi}{2}$       46.)  $0^\circ \leq \theta < 360^\circ$   
 $\sec \theta = 1.39$        $\sin \theta = .5621$        $\cot \theta = -3.08$
- 47.)  $0^\circ \leq \theta < 360^\circ$       48.)  $0 \leq \theta < 2\pi$       49.)  $0 \leq \theta < 2\pi$   
 $\tan \theta = 1.19$        $\cos \theta = -.352$        $\csc \theta = -.743$

- Answers:** 1.  $-300^\circ$  2.  $\frac{7}{6}\pi$  3.  $330^\circ$  4.  $\frac{-7\pi}{4}$  5. II 6. II 7. I 8. II
9. III 10. II 11.  $13^\circ$  12.  $60^\circ$  13.  $\frac{\pi}{4}$  14.  $\frac{\pi}{3}$  15.  $\frac{\sqrt{3}}{2}$  16. und
17.  $\frac{-\sqrt{2}}{2}$  18.  $-2$  19.  $\frac{-\sqrt{3}}{3}$  20.  $-1$  21.  $\frac{1}{2}$  22.  $\frac{\sqrt{3}}{3}$  23. 0 24.  $\frac{-2\sqrt{3}}{3}$
25. und 26.  $\sqrt{2}$  27. 0 28.  $-\sqrt{3}$  29.  $\frac{-\sqrt{3}}{2}$  30.  $\frac{-2\sqrt{3}}{3}$  31.  $\tan \theta = \frac{-2\sqrt{5}}{5}$
- $\csc \theta = \frac{3}{2}$ ,  $\sec \theta = \frac{-3\sqrt{5}}{5}$ ,  $\cot \theta = \frac{-\sqrt{5}}{2}$  32.  $\sin \theta = \frac{-3}{5}$ ,  $\tan \theta = \frac{-3}{4}$ ,  $\csc \theta = \frac{-5}{3}$
- $\sec \theta = \frac{5}{4}$ ,  $\cot \theta = \frac{-4}{3}$  33.  $\sin \theta = \frac{-12}{13}$ ,  $\cos \theta = \frac{-5}{13}$ ,  $\tan \theta = \frac{12}{5}$ ,  $\csc \theta = \frac{-13}{12}$
- $\sec \theta = \frac{-13}{5}$ ,  $\cot \theta = \frac{5}{12}$  34.  $\frac{\pi}{4}$  35.  $\frac{\pi}{6}$  36.  $30^\circ, 150^\circ$  37.  $120^\circ, 240^\circ$
38.  $\pi$  39.  $\frac{3\pi}{4}$ ,  $\frac{7\pi}{4}$  40.  $-1.5979$  41.  $-1.1792$  42.  $.2419$  43.  $-.3888$
44.  $43.9930^\circ$  45.  $.5969$  46.  $162.0127^\circ, 342.0127^\circ$  47.  $49.9584^\circ, 229.9585^\circ$
48.  $1.9305, 4.3527$  49. no solution