

## Honors Algebra II Trigonometry Review

- The point  $(-4, 10)$  is on the terminal side of an angle in standard position. Determine 6 trigonometric functions of that angle.
- If  $\sin \theta < 0$  and  $\cos \theta > 0$ , which quadrant does  $\theta$  lie?
- If  $\tan \theta < 0$  and  $\sin \theta > 0$ , which quadrant does  $\theta$  lie?
- Evaluate and leave as an exact value
  - $\sin 225^\circ$
  - $\cos 120^\circ$
  - $\tan 90^\circ$
  - $\cos \frac{\pi}{3}$
  - $\cot \left( -\frac{\pi}{3} \right)$
  - $\cos \frac{5\pi}{6}$
  - $\tan \frac{3\pi}{4}$
- Find the reference angle if  $\theta$  is
  - $620^\circ$
  - $200^\circ$
  - $-135^\circ$
  - $\frac{9\pi}{4}$
- Name a positive and negative angle coterminal with
  - $\frac{5\pi}{3}$
  - $300^\circ$
- Find the solutions to the equations where  $0^\circ \leq \theta < 360^\circ$ :
  - $\cos \theta = 0$
  - $\tan \theta = -\sqrt{3}$
  - $\sec \theta = 2$
  - $\sin \theta = \frac{\sqrt{2}}{2}$
- Find the value of  $\sin \theta$ , if:
  - $\csc \theta = \frac{5}{4}$  where  $\theta$  lies in QII
  - $\cos \theta = -\frac{3}{8}$  where  $\theta$  lies in QII
  - $\tan \theta = 1$  where  $\theta$  lies in QI
- Convert  $\theta$  into radians:
  - $\theta = 400^\circ$
  - $\theta = 120^\circ$

10. Convert  $\theta$  into degrees:

a.  $\theta = \frac{8\pi}{3}$

b.  $\theta = \frac{11\pi}{6}$

c.  $\theta = \frac{9\pi}{2}$

11. If a bicycle tire with a radius of 12 inches completes 10 rotations in 15 seconds: \*\*Remember  $s = r \cdot \theta$  \*\*

a. What is the angular speed ( $\theta/\text{min}$ )?

b. What is the linear speed ( $s/\text{min}$ )?

12. If  $\theta = 300^\circ$  and  $r = 4$ , what is the arc length?

13. Graph the following functions:

a.  $f(x) = 3\sin(2x) - 1$

b.  $g(x) = -\frac{1}{2}\sin(\pi x) + 3$

c.  $h(x) = 5\cos\left(\frac{\pi x}{3}\right)$

d.  $j(x) = -\cos(x) + \frac{\pi}{3}$