

Name: _____ Class: _____

Honors Pre-Calculus Homework Packet: UNIT 4 Trigonometric Functions

4.1 and 4.2

Convert from DMS to Degrees

1. $35^{\circ}24'$ 2. $-48^{\circ}30'36''$

Convert from Degrees to DMS

3. -49.7° 4. 99.37°

Convert from Radians to Degrees

5. $\frac{3\pi}{5}$ 6. $\frac{\pi}{10}$ 7. $-\frac{7\pi}{9}$ 8. $\frac{13\pi}{3}$

Convert from Degrees to Radians

9. 150° 10. -330° 11. 1025° 12. -290°

Arc Length: Given some information about the length of an arc, find the missing information.

13. $r = 12\text{in}$, $\theta = 30^{\circ}$, find the arc length 14. $\theta = 225^{\circ}$, arc length = 7π , find the radius
15. Two Coast Guard patrol boats leave Cape May at the same time and at the same speed. One travels with a bearing of $42^{\circ}30'$ and the other with a bearing of $52^{\circ}12'$. How far apart will they be when they are both 25 miles from Cape May?
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4.3

Use the unit circle to evaluate each trig function.

1. $\sin\frac{\pi}{4}$ 2. $\cos\frac{-3\pi}{2}$ 3. $\tan\frac{11\pi}{3}$ 4. $\csc(-120^{\circ})$ 5. $\sec\frac{-5\pi}{6}$
6. $\cot(600^{\circ})$ 7. $\sin(-45^{\circ})$ 8. $\cos\frac{17\pi}{6}$ 9. $\tan 3\pi$ 10. $\csc\frac{\pi}{6}$
11. $\sec(-450^{\circ})$ 12. $\cot\frac{44\pi}{3}$

Use the given information to find the other five trig functions.

13. $\cos\theta = \frac{2}{3}$ and $\tan\theta > 0$ 14. $\cot\theta = -\frac{7}{11}$ and $\sin\theta > 0$ 15. $\sec\theta = -\frac{5}{4}$ and $\sin\theta < 0$
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4.7

Use the unit circle to find the exact value of each inverse trig function.

1. $\sin^{-1}\left(-\frac{1}{2}\right)$ 2. $\cos^{-1} 1$ 3. $\arctan(\cos(\pi))$ 4. $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$ 5. $\tan^{-1}(-\sqrt{3})$
6. $\sin(\tan^{-1} 1)$ 7. $\cos^{-1}\left(\sin\frac{7\pi}{6}\right)$ 8. $\cos\left(2\left(\sin^{-1}\left(\frac{1}{2}\right)\right)\right)$ 9. $\arccos\left(\tan\left(\frac{\pi}{4}\right)\right)$
10. $\cos^{-1}\left(-\frac{1}{\pi}(\sin^{-1}(1))\right)$ 11. $\cot\left(\arccos\left(\csc\left(\frac{5\pi}{4}\right)\right)\right)$ 12. $\sec^{-1}\left(\frac{4}{3}\left(\cos\left(\sin^{-1}\left(-\frac{1}{2}\right)\right)\right)\right)$