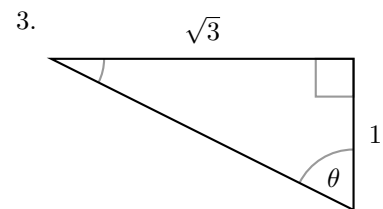
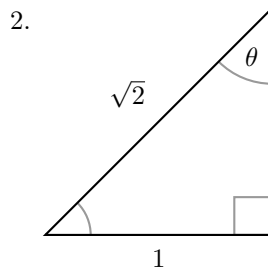
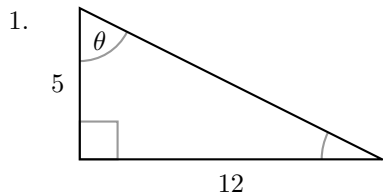


Trigonometry Worksheet

Math Tutorial Lab Special Topic*

Example Problems

Find the value of the six trigonometric functions of the angle θ .



Convert from degree measure to radian measure

4. 420°

5. 225°

6. -72°

Convert from radian measure to degree measure

7. $\frac{2\pi}{3}$

8. $-\frac{11\pi}{6}$

9. 8π

Find an angle between 0 and 2π that is coterminal to θ .

10. $\theta = \frac{7\pi}{3}$

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

12. $\theta = \frac{11\pi}{4}$

Graph θ in the unit circle and determine the reference angle.

13. $\theta = \frac{2\pi}{3}$

14. $\theta = -\frac{\pi}{3}$

15. $\theta = \frac{13\pi}{6}$

Determine $\sin \theta$ and $\cos \theta$. Use these values to find $\tan \theta$, $\csc \theta$, $\sec \theta$, and $\cot \theta$.

16. $\theta = \frac{4\pi}{3}$

17. $\theta = -\frac{5\pi}{6}$

18. $\theta = \frac{11\pi}{4}$

*Created by Maria Gommel, July 2014

Answers

1. $\sin \theta = \frac{12}{13}, \cos \theta = \frac{5}{13}, \tan \theta = \frac{12}{5},$
 $\csc \theta = \frac{13}{12}, \sec \theta = \frac{13}{5}, \cot \theta = \frac{5}{12}$

2. $\sin \theta = \frac{\sqrt{2}}{2}, \cos \theta = \frac{\sqrt{2}}{2}, \tan \theta = 1,$
 $\csc \theta = \sqrt{2}, \sec \theta = \sqrt{2}, \cot \theta = 1$

3. $\sin \theta = \frac{\sqrt{3}}{2}, \cos \theta = \frac{1}{2}, \tan \theta = \sqrt{3},$
 $\csc \theta = \frac{2\sqrt{3}}{3}, \sec \theta = 2, \cot \theta = \frac{\sqrt{3}}{3}$

4. $\frac{7\pi}{3}$

5. $\frac{5\pi}{4}$

6. $-\frac{2\pi}{5}$

7. 120°

8. -330°

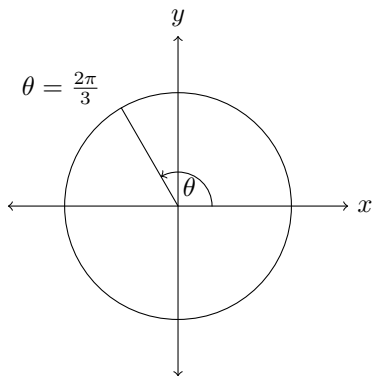
9. 1440°

10. $\frac{\pi}{3}$

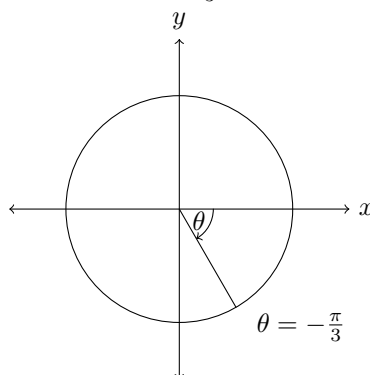
11. $\frac{\pi}{6}$

12. $\frac{3\pi}{4}$

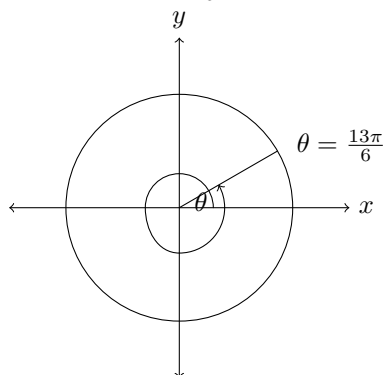
13. reference angle: $\frac{\pi}{3}$



14. reference angle: $\frac{\pi}{3}$



15. reference angle: $\frac{\pi}{6}$



16. $\sin \theta = -\frac{\sqrt{3}}{2}, \cos \theta = -\frac{1}{2}, \tan \theta = \sqrt{3},$
 $\csc \theta = -\frac{2\sqrt{3}}{3}, \sec \theta = -2, \cot \theta = \frac{\sqrt{3}}{3}$

17. $\sin \theta = \frac{1}{2}, \cos \theta = \frac{\sqrt{3}}{2}, \tan \theta = \frac{\sqrt{3}}{3},$
 $\csc \theta = 2, \sec \theta = \frac{2\sqrt{3}}{3}, \cot \theta = \sqrt{3}$

18. $\sin \theta = \frac{\sqrt{2}}{2}, \cos \theta = -\frac{\sqrt{2}}{2}, \tan \theta = -1,$
 $\csc \theta = \sqrt{2}, \sec \theta = -\sqrt{2}, \cot \theta = -1$