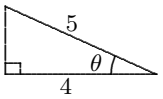
# Review 1A

Math 113 The learning center is open for help.

1. Convert $101.61°$ to DMS measure.
2. Convert $50°$ to exact radian measure.
3. Find the measure in radians and degrees of the circle of radius 5 meters subtended by an arc of length 6 meters.
4. Find exact values of the six trig functions for $\theta$ in the right triangle: 

5. Let $\theta$ be an acute angle in a right triangle. If $\sec\theta = 4$, find $\tan\theta$ (exactly).
6. Find an exact value for $\tan 30° + \tan 60°$.
7. Find the reference angle, $\theta'$, when $\theta = 280°$.
8. Use the reference angle to find an exact value for $\cos 135°$.
9. Evaluate $W(\pi)$.
10. Determine whether $f(x) = \cos x + \cot x$ is even, odd or neither.
11. Use trigonometric identities to write $\dfrac{1}{1-\sin t} + \dfrac{1}{1+\sin t}$ in terms of a single trig function.
12. State Amplitude and period of $y = 4\cos(3x)$ and graph a period of the function.
13. State the period and sketch one complete period of $y = 2\cot\left(\frac{x}{2}\right)$.
14. State phase shift and period and graph one complete period of $y = 2 + \sin(2x + \pi)$.
15. Write an equation for the simple harmonic motion with maximum displacement at $t = 0$, Amplitude 4 cm and period 1 second.

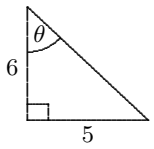
Answers to problems above: 1. $101°36'36''$ 2. $\frac{5\pi}{18}$ 3. $\frac{6}{5}$ radians or $\frac{216°}{\pi} \approx 68.7549°$ 4. $\sin\theta = \frac{3}{5}, \cos\theta = \frac{4}{5}, \tan\theta = \frac{3}{4}, \csc\theta = \frac{5}{3}, \sec\theta = \frac{4}{5}, \cot\theta = \frac{4}{3}$ 5. $\sqrt{15}$ 6. $\frac{4}{\sqrt{4}}$ 7. 8. $-\frac{\sqrt{2}}{2}$ 9. $(-1, 0)$ 10. neither 11. $2\sec^2 t$ 12. 4, $\frac{2\pi}{3}$ (Graph in class) 13. $2\pi$ (Graph in class) 14. $-\frac{\pi}{2}$, $\pi$ 15. $y = 4\cos(2\pi x)$

# Review 1B

Math 113

Calculators may be checked out of the library.

1. Convert $12°24'36''$ to decimal degree measure.
2. Convert $\dfrac{11\pi}{3}$ to exact degree measure.
3. Find the length of the arc that subtends an angle of $\theta = \dfrac{\pi}{4}$ in a circle of radius 10 cm.
4. Find exact values of the six trig functions for $\theta$ in the right triangle:




5. Let $\theta$ be an acute angle in a right triangle. If $\sin\theta = \frac{5}{8}$, find $\sec\theta$ (exactly).
6. Find an exact value for $\sin\frac{\pi}{3} + \cos\frac{\pi}{3}$.
7. Find the reference angle, $\theta'$, when $\theta = \frac{3\pi}{5}$.
8. Use a calculator to find $\cot\frac{\pi}{10}$ to 6 decimal places.
9. Evaluate $W(\frac{\pi}{6})$.
10. Determine whether $f(x) = \cos x \sin x$ is even, odd or neither.
11. Use trigonometric identities to write $\sin x \sec x$ in terms of a single trig function.
12. State Amplitude and period of $y = \frac{1}{2}\sin(\pi x)$ and graph a period of the function.
13. State the period and sketch one complete period of $y = 2\sec\left(\frac{\pi x}{3}\right)$.
14. State phase shift and period and graph one complete period of $y = 2\cot\left(2x - \frac{\pi}{3}\right)$.
15. Write an equation for the simple harmonic motion with zero displacement at $t = 0$, Amplitude 1 cm and frequency 1/5 cycle per second.

Answers to problems above: 1. 12.41° 2. 660° 3. $\frac{5\pi}{2} \approx 7.8540$ cm. 4. $\sin\theta = \frac{5}{\sqrt{61}}, \cos\theta = \frac{6}{\sqrt{61}}, \tan\theta = \frac{5}{6}, \csc\theta = \frac{\sqrt{61}}{5}, \sec\theta = \frac{6}{\sqrt{61}}, \cot\theta = \frac{6}{5}$ 5. $\frac{8}{\sqrt{39}}$ 6. $\sqrt{3}$ 7. 8. 3.077684 9. $(\frac{\sqrt{3}}{2}, \frac{1}{2})$ 10. odd 11. $\tan x$ 12. $\frac{1}{2}$, 2 (Graph in class) 13. 6 (Graph in class) 14. $\frac{\pi}{6}$, $\frac{\pi}{2}$ 15. $y = \sin(10\pi x)$