

Test 2 (Sections 6.4, 6.5, 6.6, 6.7, 7.1, 7.2)
Walk in Thurs. Feb. 26 (9:15-4:30) and Fri. Feb. 27 (9:15 -3:30)
May not test 1 hour before Math Test Center (KT G18) closes

1. Identify the period, amplitude, midline, and horizontal shift of a sinusoidal function given the equation or graph or verbal description. Section **6.4** #1-8, Section **6.5** # 1-4, 7, 9, 10 and **Ch 6 Review** #19-29
2. Know the main characteristics (period, amplitude, midline, domain, range, concavity, symmetry, when it is positive, negative, increasing, decreasing) of the graph of $y = \sin \theta$, and $y = \cos \theta$. Relate this to the unit circle as the x -coordinate (cosine) or the y -coordinate (sine) of the point on the circle. Section **6.3** – 26, 27 and Section **6.4** #9, 16-22, 26, 27 and Section **6.5** #25 and **Ch 6 Review** #3.
3. Understand the definitions of $\sin \theta$, $\cos \theta$, $\tan \theta$, $\csc \theta$, $\sec \theta$, $\cot \theta$ and be able to find **exact** values
 - a. if given the angle θ as a multiple of 30° , 45° , and 60° ; (or $\pi/6$, $\pi/4$, or $\pi/3$)
Section **6.4** #10-15, 23, 24 and Section **6.6** #1-16 and Section **6.7** #25, 26 and **Ch 6 Review** #35-37
 - b. if given the value of one of these trig functions and which quadrant the angle θ is in.
(Set up a right triangle with labeled sides and invoke the help of Pythagoras and SOHCAHTAH or use $\sin^2\theta + \cos^2\theta = 1$). Section **6.6** #17-20, 23, 24, 28-31 and **Ch 6 Review** #38
Know that exact values are not decimal approximations read off of a calculator display.
4. Given the equation or graph or verbal description of a sinusoidal function, find a possible formula. Section **6.5** #11-18, 27-33, 35, 37-40, 42 and Section **6.7** #51, 53 and **Ch 6 Review** #30, 42-47, 60, 61, 64
5. Understand $y = A\sin(B(x-h)) + k$ and $y = A\cos(B(x-h)) + k$. Know how A , B , h , k affects the shape of the graph, their relationship to the amplitude, period, and horizontal and vertical shifts, and their practical significance in a problem situation. Section **6.5** #19-22, 26, 41 and **Ch 6 Review** #18, 30, 31-34, 64
6. Understand the main characteristics (period, domain, range, concavity, symmetry, when it is positive, negative, increasing, decreasing, vertical asymptotes, behavior near its vertical asymptotes) of the graph of $y = \tan \theta$. Relate this to the unit circle as the slope of the line through the origin which is the terminal side of the angle θ . Section **6.6** #26-34 and **Ch 6 Review** #3
7. Understand the behavior of fractional or reciprocal functions and how the graph of any function $y = f(x)$ and the graph of its reciprocal $y = 1/f(x)$ are related. See Section **9.5** # 19-20 and Section **6.6** # 38
8. Solve simple trig equations over a requested interval; for example $[0, 2\pi)$, $[0, 360^\circ)$, $(-\infty, \infty)$, or other intervals, providing
 - a. exact values of angles measured in radians (when given special angles as in 3a above) **6.7** #7-14, 40-42
 - b. decimal approximations using the inverse trig functions **6.7** 1-6, 30-39, 43, 49, 50, 53
and Law of Sines and Cosines problems.
 - c. decimal approximations graphically. **6.7** # 15, 16, 27-29, 56, 57
Be aware of when more than one solution exists! Be able to sketch the angle or angles.
9. Solve trig equations such as $\sin 3\theta = \frac{1}{2}$ or $\sin 3\theta = \frac{1}{7}$ (exact or approximate) involving multiple angles or involving the $\tan \theta$, i.e. solve $\tan \theta = \sqrt{3}$ **Ch 6 Review** 39-43, 48-53, 56, 60
10. Find the reference angle of θ . Remember it is acute (and thus positive) angle formed by the x -axis and the terminal side of θ . Section **6.7** #17-24
11. Understand the meaning of the notation $\sin^{-1}x$, $\arcsin x$, \sin^2x , $\sin x^2$, etc. Section **6.7** #54, 55 and **Ch 6 Review** #58
12. Solve for sides and angles of a triangle using the Law of Sines and the Law of Cosines. Know when to use which. Section **7.1** #1-32, 38, 39 and **Ch 7 Review** #2-6
13. Find an angle or angles of a triangle if given other information. Understand the Ambiguous Case. See Section **7.1** #16-25 and Internet practice.
14. Use trigonometric identities to simplify expressions Section 7.2 - 1, 4-8, 10, 15, 21-30, 33 and eHW

You might look at the following:

Chapter 6 Check Your Understanding (page 299): 1-87

Chapter 7 Check Your Understanding (page 351): 2-30