

1. Determine the values of the period, amplitude and midline from a sinusoidal function. Use a graph of $y = f(t)$ to find a given to find a value of y if given a value of t or vice versa. Interpret what these values mean in terms of the context of the problem. See Quiz 2 and Section **6.1** – 13-28, 32 and **Ch 6 Review** 19-21
2. Sketch the position of a point on a circle of radius r corresponding to a given angle (or value of time) and give its coordinates. See Quiz 2 and Section **6.2** – 1-25, 28, 32 and Section **6.3** – 37-38 and **Ch 6 Review** #2
3. If given a point on a circle as determined by an angle θ , find coordinates corresponding to $\theta + \pi$, $\pi - \theta$, etc. (or equivalent questions in terms of degrees). Interpret the sine or cosine of these angles as coordinates. See Quiz 3 and Section **6.2** - 29, 30 and Section **6.3** - #40
4. Determine in which quadrant an angle lies if given certain conditions. See **Ch 6 Review** - #3
5. Understand radian measure. Section **6.3** – 1-45 and **Ch 6 Review** – 4-14
6. Understand the relationship between arclength, radius and an angle measure in radians. If given two of the arclength, radius or an angle find the third. Note: $s = r\theta$ = only if θ is in radians. Section **6.3** – 20-34, 42, 43 and **Ch 6 Review** – 15-17, 54
7. Know exact values of sine and cosine for multiples of 30° , 45° , and 60° and their radian equivalents. Section **6.4** -- 10-15, 23, 24 and **Ch 6 Review** 35-37, 48 and also Section **6.7** -- 7-14, 25, 26. Draw these angles on the unit circle.
8. If given two sides of a right triangle and an angle θ , find the third side and find exact values of $\sin \theta$, $\cos \theta$, and $\tan \theta$. See **Ch 6 Tools** – 1-20
9. Solve applied problems involving right triangles. See **Ch 6 Tools** – 21-23, 25, 28, 30, 31
10. 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
11. 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.
12. 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. (Use $\sin^2 \theta + \cos^2 \theta = 1$ or set up a right triangle with labeled sides and invoke the help of Pythagoras and SOHCAHTAH).
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.
13. 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
14. 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
15. 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
16. Understand the behavior of 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