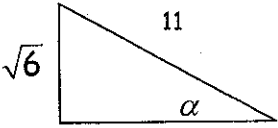


Fall 2009

Ch 6

SHOW ALL WORK ON A SEPARATE SHEET OF GRAPH PAPER.

1. State all even/odd properties	2. If $f(x)=\sin x$ and $f(a) = \frac{3}{4}$ Find the exact value of: a) $f(-a)$ b) $f(a) + f(a+2\pi) + f(a - 2\pi)$	3. What is the range of the sine function? What is the domain of the sine function?
4. Fill in the missing blanks: $\sin 30^\circ = \cos$ _____ $\sec 11^\circ = \csc$ _____ $\tan 4^\circ = \cot$ _____ $\sec 16^\circ - \csc 74^\circ =$ _____	5. Find: $\sin \alpha$, $\cos \alpha$, $\tan \alpha$, $\csc \alpha$, $\sec \alpha$ and $\cot \alpha$ 	6. a) For what numbers θ is $f(\theta)=\sec \theta$ not defined? b) For what numbers θ is $f(\theta)=\csc \theta$ not defined? c) For what numbers θ is $f(\theta)=\cot \theta$ not defined? d) For what numbers θ is $f(\theta)=\tan \theta$ not defined?
7. Graph each of the following on graph paper, listing all 5 critical points for each graph. a) $y = \sin 3x + 6$ c) $y = \sec(2x - \frac{\pi}{2})$ e) $y = -2 \tan 3\theta$ b) $y = 3 \cos(x - \pi)$ d) $y = -2 \csc \theta$ f) $y = 2 \cot x$		
8. HOURS OF DAYLIGHT. According to the "Old Farmer's Almanac", in Honolulu, Hawaii, the number of hours of sunlight on the day of the summer solstice is 12.767 and the number of hours of sunlight on the day of the winter solstice is 10.783. a) Find the sinusoidal function in the form: $y = A \sin(\omega x - \phi) + D$ that fits the data. b) Draw a graph of the function. c) Use the function to predict the number of hours of sunlight on April 1, the 91 st day of the year.		