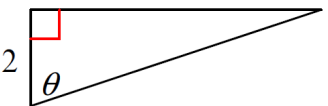
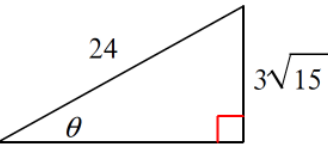


**Part A – The following problems will be MULTIPLE-CHOICE on the test.****I. Below is a table of all the vocabulary in this unit.**

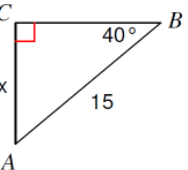
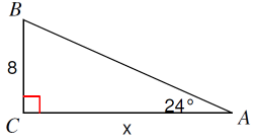
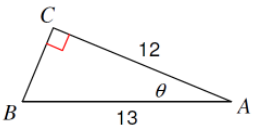
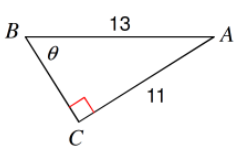
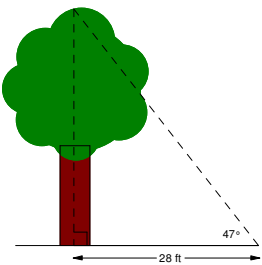
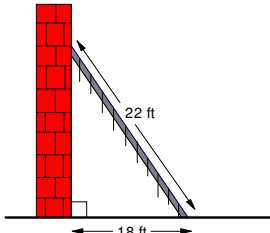
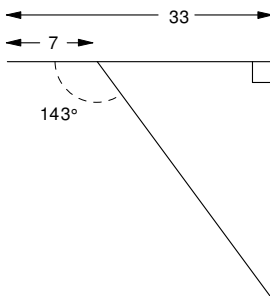
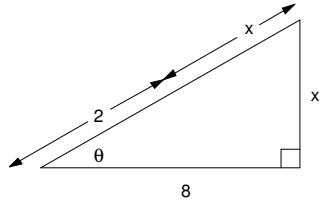
1.) Make sure you know all the definitions for all the vocabulary words.

radical	Pythagorean Thm	leg	hypotenuse	right angle
sine	cosine	tangent	Theta	rationalize den
opposite (side)	adjacent (side)	arcsine	arccosine	arctangent
solve (a triangle)	angle of elevation	angle of depression	alt. interior angles	capital vs. lowercase

**II. Complete the table for finding the remaining side and the value of all THREE trig ratios.****Make sure your answers are completely simplified in fractional and radical form (No decimals)!**

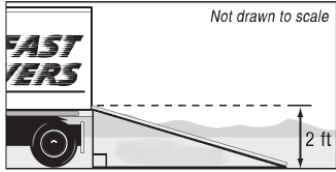
Given Right Triangle	Work to Find Missing Side	THREE trig ratios for angle $\theta$
2.) 		
3.) 		

**III. Find value of length x, angle  $\theta$ , or what is asked. Round to tenth place. Must show work!**

4.) 	5.) 	6.) 	7.) 
8.) How tall is the tree? 	9.) What is the angle formed by the ladder and the wall? 	10.) What is length of the hypotenuse? 	11.) What is the complement of angle $\theta$ ? 

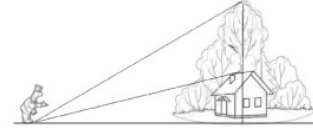
**IV. Complete each word problem. Round to tenth place. Must show work!**

- 12.) The tailgate of a moving truck is 2 feet above the ground. The incline of the ramp used for loading the truck is  $15^\circ$ . What is the length of ramp in inches?

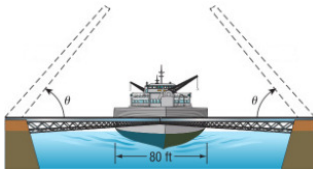


- 13.) An airplane is starting to descend to a local airport's 3 mile runway. The airplane is 7 miles from the end of the runway. What is the plane's angle of depression to the end of the runway?

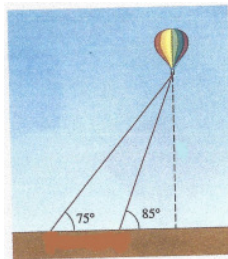
- 14.) From his viewpoint, Larry estimates that there is a  $25^\circ$  angle to the top of his house. At the same time, he estimates that there is a  $65^\circ$  angle to the top of a nearby 83-foot tree. What is the height of Larry's house?



- 15.) Each leaf of a double-leaf drawbridge is 145 feet long. An 80-foot wide ship needs to pass through the open bridge. What is the minimum value of angle  $\theta$  which each leaf of the bridge should open so that the ship will fit?



- 16.) A hot air balloon is attached to two ropes on the ground. The ropes are 125 ft apart with different angles of elevation to the balloon. How high is the balloon?

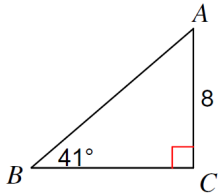


- 17.) An airplane is flying at an elevation of 4,600 ft, directly above a straight highway. Two motorists are driving cars on the highway on opposite sides of the plane, and the angle of depression to one car is  $32^\circ$  and the other is  $56^\circ$ . How far apart are the cars?

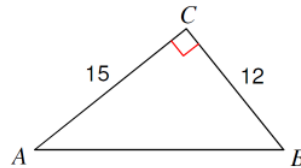
**Part B – The following problems will be SHORT ANSWER on the test.**

**V. Solve each triangle – use appropriate letters. Round to tenth place. Must show work!**

18.)



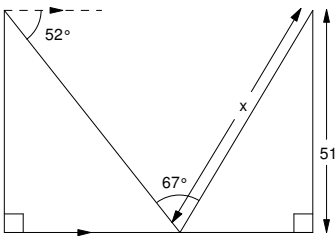
19.)



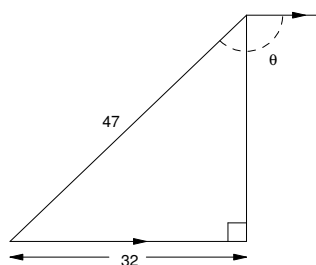
**VI. Critical Thinking Problems – Find the indicated side or angle for each given diagram.**

**Note: These diagrams are NOT DRAWN to SCALE!! Round to tenth place. Must show work!**

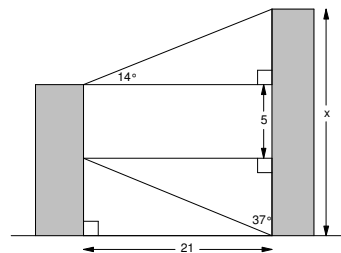
20.) Find side  $x$ .



21.) Find angle  $\theta$ .



22.) Find length of  $x$ .



23.) Find angle  $\theta$ .

