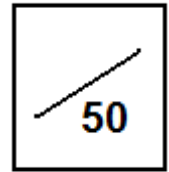


- ▶ This assignment is to be written up individually ( I should not see identical papers ).
- ▶ Work primarily by yourself. You may ask a question of Mr. Hamilton outside of class, but you should not “give away” how to do problems to your peers.
- ▶ Points will be earned for each of your solution process, explanation, and answer.  
*An answer alone will not be enough to earn a decent grade!*
- ▶ Please do all work **(including drawing figures)** on separate paper and attach this to the front!  
 [ Anything you want me to grade MUST be on separate sheets, with problems appearing in order. ]
- ▶ This is due at the beginning of class Thursday. Assignments turned in late are automatically deducted 50% of the possible points. Any assignment submitted on or after Wednesday, November 16, will be an automatic zero.



*On this side, all answers should be in EXACT form (simplified fractions and square root expressions).  
 If a line appears to be a straight line, then assume it is a straight line.*

1.) Simplify the following expressions completely. [ 6 Points ]

A.)  $\frac{2\sqrt{6}}{3\sqrt{7}}$

B.)  $\left(\frac{4\sqrt{7}}{5}\right)^2$

C.)  $2\sqrt{405} - 3\sqrt{80}$

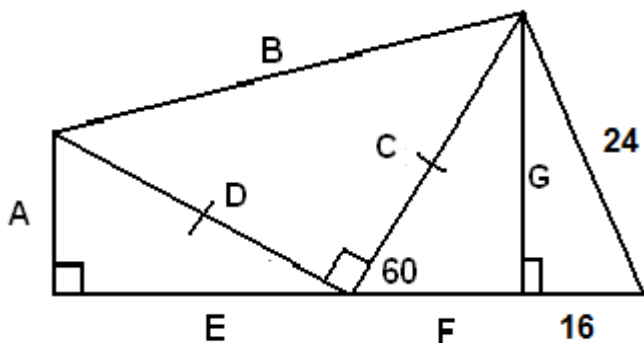
D.)  $\frac{2}{30\sqrt{6}}$

E.)  $(2\sqrt{5})(6\sqrt{15})$

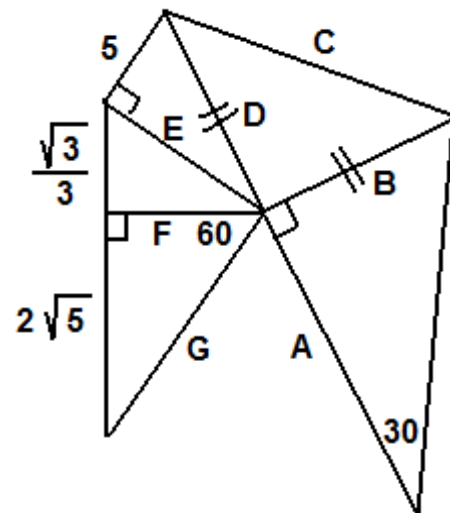
F.)  $\frac{7\sqrt{6}}{4\sqrt{5}}$

2.) Solve for the variables in the figures below in EXACT form. [ 14 Points ]  
**Make it clear what you're doing applies to the triangle in which you're working.**

A.)



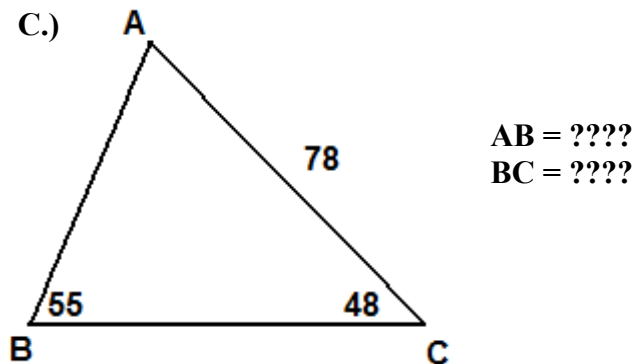
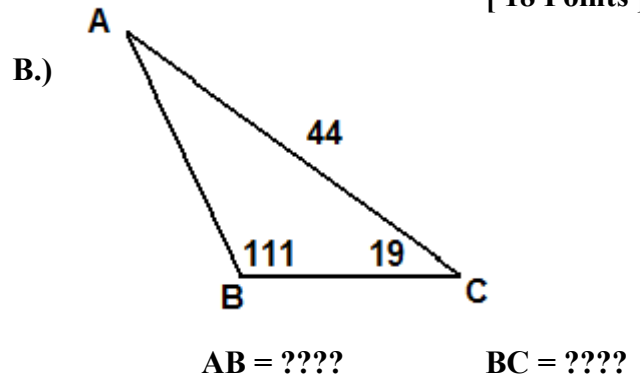
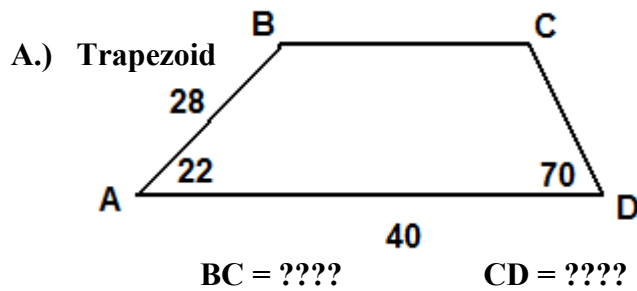
B.)



On this side, all answers should be decimals. Please use at least three decimal digits from each trig ratio. You must show the work we discussed in class for credit (setup, decimal, solve).

3.) In each figure, solve for the requested items.

[ 18 Points ]

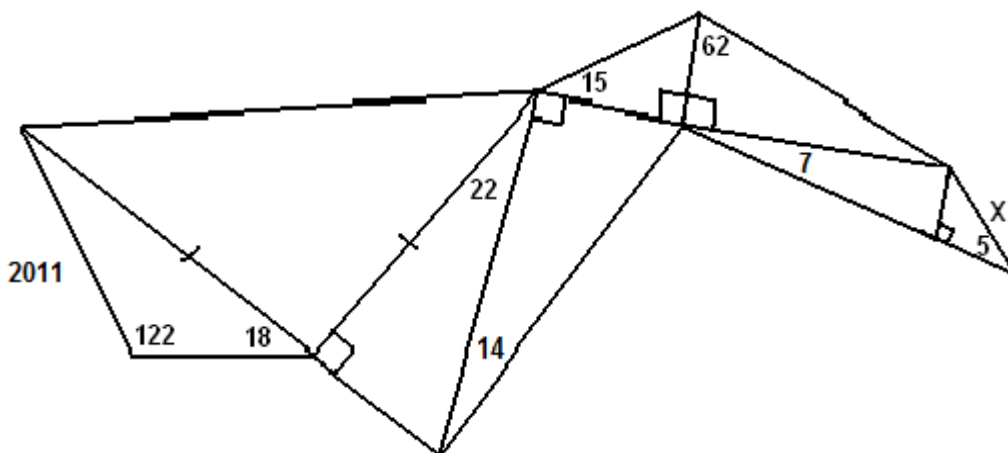


4.) Josh goes to an art museum. He looks at a large framed picture that is 4 feet tall as he stands 15 feet away from the wall. If this picture is hanging on the wall so that its bottom is three feet above Josh's horizontal line of sight, what angle is formed by Josh's eyes as he views the picture from top to bottom?

[ 4 Points ]

5.) Solve for x.

[ 5 Points ]



6.) To measure the height of a building, Joe has a brilliant idea! From the roof, he throws a penny and a dime as far as he can. After doing this (at the edge of the roof), he measures the angle of depression to be  $24^\circ$  to see the penny and  $14^\circ$  to see the dime. Then, he goes to the ground floor, runs outside, and measures the distance between the coins to be 30 feet. From this, Joe knows he can find the height of the building. What is the height of the building? Note that Joe is six feet tall (his eyes are six feet above the ground).

[ 3 Points ]