Name————————————————, ID ————————————

HW 3 , Math 330, Fall 2014

Ayman Badawi

QUESTION 1. Draw a reasonable line segment and call it AB.

1. (**5 points**) Divide AB into 3 equal parts. Let us call the length of each part x, so $|AB| = 3x$.

2. (**12 points**) Use (1) to Construct a line segment of length $\sqrt{\sqrt{13}x^2 - x^2} = x\sqrt{\sqrt{13} - 1}$. Only unmarked ruler and a compass are allowed in this construction. STATE the steps CLEARLY (by neat and clear diagrams). [Hint: Use a suitable right triangle with some modification in order to construct a line segment of length $\sqrt{13}x - x$. Then use the techniques we learned on how to construct a line segment of length $\sqrt{|C\ D|}$]

3. (**8 points**) Use (2) and (1) to construct a line segment of length $\sqrt{3x}\sqrt[4]{\sqrt{13}x^2 - x^2}$. Only unmarked ruler and a compass are allowed in this construction. STATE the steps CLEARLY (by Clear and neat diagrams).

NOTE that Only (2) needs some head scratching, (1) and (3) are easy!! so minimum score for all of you should be 13

Faculty information

Ayman Badawi, Department of Mathematics & Statistics, American University of Sharjah, P.O. Box 26666, Sharjah, United Arab Emirates.
E-mail: abadawi@aus.edu, www.ayman-badawi.com