Name————————————————, ID ————————————

Second Project MTH 211 Fall 2009

Ayman Badawi

1 Group: Vishal Sawlani, James Moussa , Odulana Adetayo

(i) You may use a MARKED RULER and a COMPASS ONLY. Construct a regular 10-gon so that each side is of length one cm. I DO NOT WANT TO SEE ANY MATH JUSTIFICATION. JUST WRITE DOWN the steps of construction CLEARLY.

2 Group: Hiba AlSafi, Dana Nabtiti, Masa Afaneh

(i) You may use a MARKED RULER and a COMPASS ONLY. Construct a regular 12-gon so that each side is of length one cm. I DO NOT WANT TO SEE ANY MATH JUSTIFICATION. JUST WRITE DOWN the steps of construction CLEARLY.

3 Group: Dalia AlOurfali, Noor AbdulHamid, Suzan Momani

(i) You may use a MARKED RULER and a COMPASS ONLY. Construct a golden rectangle such that Height/Width = Golden Ratio. Inside the golden rectangle construct a golden spiral such that the radius of the first arc is 4 cm. What are the radius of the second arc and the third arc? I want the EXACT length of each radius (no approximation). Also give me the exact height and width of the golden rectangle you constructed.

4 Group: Suheyla Takesh, Leen Rihawi, Aman

(i) Use a marked Ruler to draw a line segment of length 12 cm. Now hide your marked ruler and use only a compass and unmarked ruler to divide the line segment into six parts in order to construct two triangles: one is a golden acute triangle and the other is obtuse golden tiangle. What is the length of each side (part)? I need the exact length not approximation.

5 Group: Farah Nasri , Seyede Pariya Manafi, Sawsan Al Bahar

(i) Use a marked Ruler to draw a line segment of length 8 cm. Now hide your marked ruler and use only a compass and unmarked ruler to divide the line segment into four parts in order to construct a golden rectangle. What is the length of each side (part)? I need the exact length not approximation.

6 Group: Nedal Machou, Dana Salam, Momen Abdalghani

(i) Draw a line segment of length 5cm and call it AB. Now hide your marked ruler. Use unmarked ruler and a compass only to construct an obtuse golden triangle over the base AB. Then partition the triangle into an acute golden triangle and an obtuse golden triangle. I DO NOT WANT TO SEE ANY MATH JUSTIFICATION. JUST WRITE DOWN the steps of construction CLEARLY.

7 Group: Khalda El Jack, Reyan Hanafi

(i) Using Unmarked ruler and compass, can we construct an angle of 7.5 degrees? Justify your answer. Do not construct.

(ii) Using Unmarked ruler and compass, can we construct an angle of 36 degrees? Justify your answer. Do not construct.

(iii) If you are told that you can not construct an angle of 40 degrees, just using this piece of information give me quickly 7 more angles that we can not construct. Tell me why we can not construct an angle of 40 degree?

(iv) Is there a regular 45-gon? if yes then state the steps of constructions (do not do the actual construction)

8 Group: Sepideh, Shital, Safa

(i) do number four on page 23.

(ii) do number 5 on page 23, but modify the problem a little: Draw a line segment of length 5cm and call it AB. Now use unmarked ruler and a compass only to construct a golden rectangle over the base AB so that the width (base) = AB is longer than the height.

9 Group: Samar Ali Abd Al Azez, Farah Faris Mudhefer, Fadi Banani

(i) CONVINCE me that we can not trisect an angle of 60 degrees using unmarked ruler and a compass. I gave you enough information in the class to answer such question.

(ii) In general, we can not trisect every given angle using unmarked ruler and a compass. However, we can trisect an angle of 90 degree. So, draw an angle of 90 degrees, then use unmarked ruler and a compass to trisect the 90 degrees angle.

10 Group: Vahid Farbod, Abdolreza Khalili, Seyedeh Negar Sanadizadeh

(i) DO NUMBER 8 ON PAGE 23.

(ii) DO NUMBER 9 (a) AND (b) on pages 23, 24.

(iii) a triangle ABC is called a semi-golden obtuse triangle if AB = AC and $AB/BC = \frac{1+\sqrt{5}}{4}$. Draw a line segment of length 10 cm and call it DF. Hide your marked RULER. NOW use only unmarked ruler and a compass, can we divide DF into three parts in order to construct a semi-golden obtuse triangle? If yes, then find the length of each side and find the three interior angles of the triangle. If no, then tell me why not!!!

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