

Name \_\_\_\_\_, ID \_\_\_\_\_

## Exam ONE, MTH 211, Spring 2010

Ayman Badawi

**QUESTION 1.** State clearly the five axioms of Euclidean Geometry.

**QUESTION 2.** Draw two Circles, Say  $C_1$  and  $C_2$ , such that  $C_1$  is orthogonal to  $C_2$  ( $C_1$  is perpendicular to  $C_2$ ). STATE THE STEPS NO NEED FOR MATH JUSTIFICATION.

**QUESTION 3.** Draw a line segment  $ab$ . Now divide the line segment into 3 equal parts. State the steps no need for math justification.

**QUESTION 4.** Draw a line segment  $ab$  of length 8. Now use unmarked ruler + a compass + marked ruler (only once) to construct a line segment of length  $\sqrt{15}$ . STATE the steps no need for math justification.

**QUESTION 5.** Let  $ab$  be a line segment of length 2cm. Extend the line segment  $ab$  at  $b$  to a point  $c$  so that the new line segment  $ac$  has  $b$  as the golden cut. State the steps no math justification is needed.

**QUESTION 6.** Let  $K_1 = 2$ ,  $K_2 = 1$  and  $K_n = 3K_{n-1} + 10K_{n-2}$ .

(i) Find  $K_4$ .

(ii) Find a general formula for  $K_n$

(iii) USE (2) to find  $K_{10}$ .

(iv) Let  $R_n = K_{n+1}/K_n$ . Find  $R_3$ . To what value does  $R_n$  converge to.

**QUESTION 7. (EXTRA CREDIT 3 points).** What is the name of your instructor and what is the course number? We meet on Su, Tu , Th at 11am in which room? What are the office hours of your instructor? (Answer: MUST BE EXACT as in the syllabus)? so now how do you feel about yourself (Good or Bad)?

### Faculty information

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