MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2009
ROUND 5 PLANE GEOMETRY: ANYTHING

ANSWERS

A) _____

B) _____

C) _____

A) I am a <u>regular</u> polygon, have more than 100 diagonals and my interior angles have an <u>integral</u> measure. What is the smallest number of sides I can have?

B) In circle O, a chord of length 28 units is $3\sqrt{6}$ units from the center of the circle. $\overline{AB}$ and $\overline{CD}$ are parallel chords in circle O on the same side of a diameter. If $AB = 26$ and $CD = 30$, compute the distance between the chords.

C) A <u>regular</u> duo-decagon (12 sides) has area 972. Compute the area of the inscribed regular hexagon $ACEGIK$?