MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2015
ROUND 5 PLANE GEOMETRY: ANYTHING

ANSWERS

A) _____

B) _____

C) _____

A) A regular polygon with 135 diagonals is inscribed in a circle.
What is the maximum degree-measure of an angle formed by two diagonals drawn from the same vertex?

B) An obtuse triangle has two sides of lengths 10 and 15. Find the number of possible integral lengths of the third side.

C) Circle O has two perpendicular chords $\overline{AB}$ and $\overline{CD}$ of length 16 and 19 respectively, intersecting at point P in the interior of the circle. PA and PC are integers. Compute the largest possible radius r for the circle O.