MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 5 – FEBRUARY 2007
ROUND 5 GEOMETRY: CIRCLES

ANSWERS

A) _____ °

B) _____

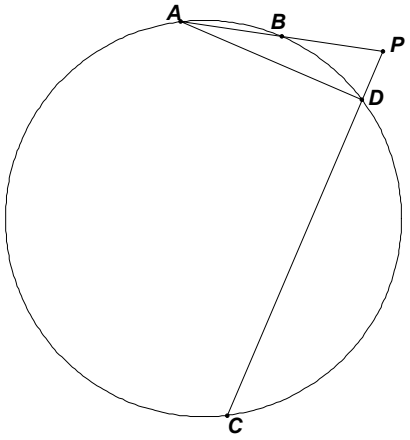
C) _____

******* NO CALCULATORS ON THIS ROUND *******

If necessary, all required lengths must be expressed in terms of simplified radicals.

A) Quadrilateral $ABCD$ is inscribed in a circle. m$\angle D = 75°$, $\overset{\frown}{AB} = x^2$, $\overset{\frown}{BC} = 5x$ and $\overset{\frown}{CD} = 6x$ Find m$\angle A$.

B) Given: $AB = 3$, $PB = 4$, $CD = 12$ and m$\angle ADP = 90°$ Determine DA.



C) Circle P and circle Q have radii 5 and 7 respectively and $PQ = 8$. Find the exact length of the common chord $\overline{AB}$.