MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 5 - FEBRUARY 2010
ROUND 5 PLANE GEOMETRY: CIRCLES

******* NO CALCULATORS IN THIS ROUND *******

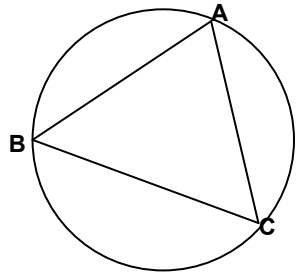
ANSWERS

A) _____ °

B) _____

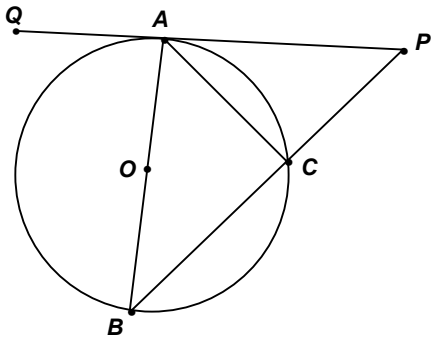
C) _____

A) Given: m$\angle A = 8x - 2$, m$\angle B = 4x + 2$ and minor arc $\overset{\frown}{AC} = 9x - 3$
Find m$\angle C$.



B) $\overline{PQ}$ is tangent to circle O at point A, $\overline{AOB}$ is a chord of circle O, $AP = 12$ and $BP : BC = 9 : 5$

Compute AC.



C) A goat is tied with a 20' rope to a 15' x 10' shed as shown. The shed has an <u>open</u> 3' doorway. In terms of π, compute the total area where the goat can roam.