

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2012
ROUND 5 PLANE GEOMETRY: ANYTHING**

ANSWERS

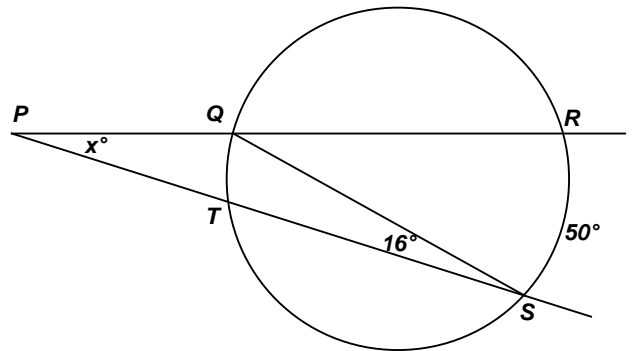
A) _____

B) _____

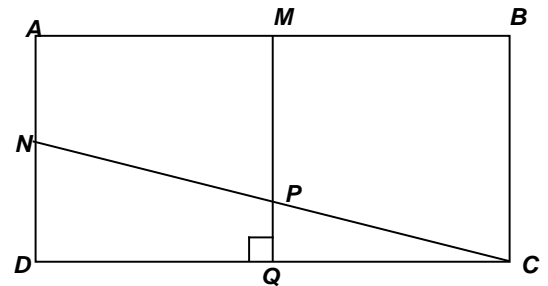
C) _____

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

A) Compute x .



B) M and N are midpoints of \overline{AB} and \overline{AD} in rectangle $ABCD$.
What fraction of the area of rectangle $ABCD$ is the area of the trapezoidal region $PQDN$?



C) Chord \overline{AB} is 2 units from the center of circle O whose diameter is 14.
Chord \overline{PQ} is perpendicular to chord \overline{AB} , intersecting in common point R .
If $m\angle PBA = 60^\circ$ and $AR : BR = 2 : 1$, compute QR .

