MASSACHUSETTS MATHEMATICS LEAGUE
MARCH 2004
ROUND 5: GEOMETRY ANYTHING

ANSWERS

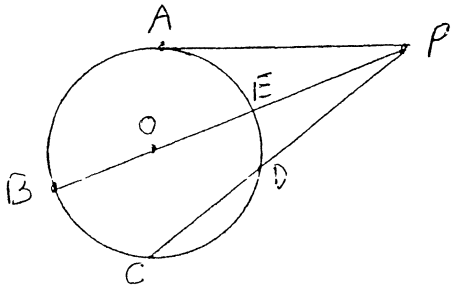
A)_____

B)_____

C)_____

A) The length of a diagonal of a cube is the same as the length of a shorter diagonal of a regular hexagon. The ratio of the total surface area of the cube to the area of the hexagon is A/B. Compute A/B in simplified radical form.

B) $\overline{PA}$ is tangent to circle O at A. PEOB and PDC are secants to circle O AP = PE + 4, PD = CD + 2. The circumference of circle O is 10π In simplified form, find PD/PA



C) Given ΔABC, AC = 2, AB = 3, and BC = 4 $\overline{BA}$ is extended to D so that $\Delta CAD \sim \Delta BCD$ Find the perimeter of ΔBCD.