MASSACHUSETTS MATHEMATICS LEAGUE
MARCH 2006
ROUND 5: PLANE GEOMETRY ANYTHING
ANSWERS

A)_____

B)_____

C)_____

A) In isosceles triangle ABC, $m\angle B = 7\,(m\angle A)$. Find both possible measures for $\angle C$.

B) In ΔJKP, $m\angle P = 90$. M is on $\overline{JK}$ so that $\overline{PM} \perp \overline{JK}$ and N is on $\overline{KP}$ so that $\overline{MN} \perp \overline{KP}$. If $JP = 450$ and $KP = 600$, find MN.

C) In ΔABD, $AD = 12$, $DB = 8$ and $BA = 16$. The bisector of exterior $\angle DBC$ intersects line AD at E; F is on $\overline{AB}$ so that FDEB is a trapezoid. If $\overline{FE}$ intersects $\overline{BD}$ at G, find BG.