MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2008
ROUND 5 PLANE GEOMETRY: ANYTHING

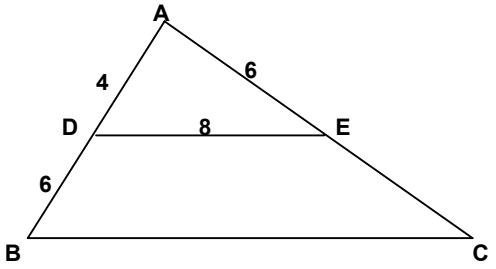
ANSWERS

A) _____

B) _____

C) _____

A) Given ΔABC, $AD = 4$, $AE = 6$, $DE = 8$, $DB = 6$ and $\overline{DE} \parallel \overline{BC}$
Find BC. Diagram is not drawn to scale.



B) A square wire frame encloses 4 congruent circular disks each tangent to two adjacent sides of the frame and to two of the other disks. A second square wire frame has its vertices at the centers of these 4 disks. If the area of the region inside the smaller wire frame not covered by any of these disks is $12 - 3\pi$, what is the area of the region bounded by the two wire frames?

C) In a regular octagon $ABCDEFGH$, $AF = 8$, compute the area of ΔAFC.