

MASSACHUSETTS MATHEMATICS LEAGUE

MARCH 2005

ROUND 5: PLANE GEOMETRY ANYTHING

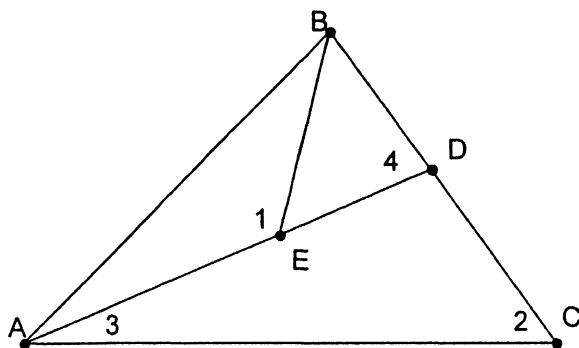
ANSWERS

A) \_\_\_\_\_

B) \_\_\_\_\_

C) \_\_\_\_\_

- A) Given  $AD > BC$  arrange the four numbered angles in descending order of size.



- B) One diagonal of a rhombus is twice as long as the other. Express the area of the rhombus in terms of its perimeter  $p$ .

- C) Right triangle ABC has right angle at B. D is on side  $\overline{AC}$  so that  $AD : DC = 1:4$  and E is on side  $\overline{BC}$  so that  $BE : EC = 3 : 2$ . If  $AB=7$  and  $BC = 24$  find the area of triangle DEC.