MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 1 - OCTOBER 2010
ROUND 2 PYTHAGOREAN RELATIONS IN RECTILINEAR FIGURES

ANSWERS

A) _____

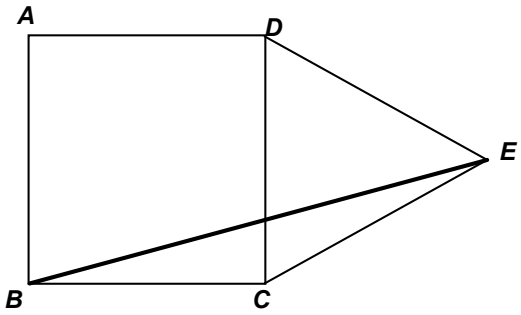
B) _____

C) _____

******* NO CALCULATORS ON THIS ROUND ******

A) In right triangle ABC, where $\angle C$ is <u>not</u> a right angle, $AB = 9$ and $BC = 13$.
Compute <u>all</u> possible values of AC.

B) $ABCD$ is a square, ΔCDE is isosceles, where $\angle E$ is the vertex angle, $AB = 16$ and $CE = 17$.
Express BE as a <u>simplified</u> radical.



C) In right triangle ABC, $\overline{AC}$ is the hypotenuse, $AB = 2\sqrt{6}$ and $BC = 5\sqrt{3}$.

The length of the altitude to the hypotenuse, in simplest form, may be expressed as $\frac{x\sqrt{y}}{z}$,

where x, y and z are positive integers..
Compute $x + y + z$.