MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 1 - OCTOBER 2016
ROUND 2 PYTHAGOREAN RELATIONS IN RECTILINEAR FIGURES

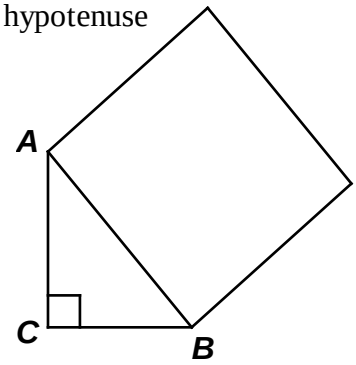
ANSWERS

A) _____

B) _____

C) _____

A) The legs of right triangle *ABC* have lengths 7 and *x*. A square drawn on the hypotenuse has area $x + 69$.
Compute the area of the square drawn on the shorter leg.



B) In right triangle *ABC*, the short leg has length 48 and the difference between the lengths of the long leg and the hypotenuse is 18. Compute the perimeter of this triangle.

C) In square *ABCD*, *E* and *F* are the midpoints of $\overline{BC}$ and $\overline{CD}$, respectively, and the area of ΔAEF is *R* square units. Find the length of the altitude of ΔAEF from *A* as a <u>simplified</u> expression in terms of *R*.