MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 – JANUARY 2007
ROUND 5 GEOMETRY: SIMILARITY OF POLYGONS

ANSWERS

A) _____ units^2

B) _____feet

C) _____ : _____

A) A segment connects the midpoints of the legs of a right triangle with sides of length 3, 4 and 5, dividing the right triangle into a triangle and a trapezoid. What is the area of the trapezoid?

B) A building has a light mounted 15 feet above the ground. A person 6 feet tall is standing 10 feet from the base of the building.
Exactly how long is the person's shadow?
(Assume the person and the building are perpendicular to level ground.)

C) Given: $\Delta ABC \sim \Delta CAD$, $AB = 12$ and $CD = 27$. Determine the simplified ratio of the area of the circle inscribed in ΔABC to area of the circle inscribed in ΔCAD.