

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 4 - JANUARY 2014
ROUND 6 ALG 1: ANYTHING

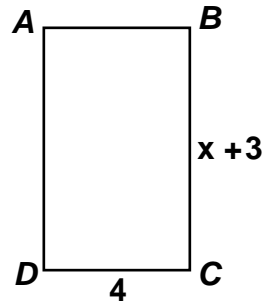
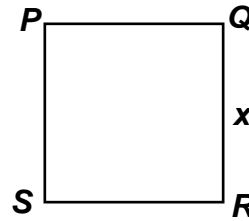
ANSWERS

A) _____ units

B) _____

C) (_____ , _____)

- A) Square $PQRS$ has the same area as rectangle $ABCD$.
Compute the perimeter of rectangle $ABCD$.



- B) You run the 100 yard dash in N seconds, where N is an integer.
Suppose you could keep up this pace for one mile. Compute the largest value of N which allows you to break the 4 minute mile and join the ranks of Roger Bannister and other world-class runners who have accomplished this incredible feat.

Recall: 1 mile equals 5280 feet

- C) For a real constant c , the straight line defined by $\frac{x}{3} + \frac{y}{4} = c$ has intercepts that are 7.2 units apart.
Compute the coordinates of the intercept farthest from the origin.