

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 2 - NOVEMBER 2007
ROUND 2 ALGEBRA 1: ANYTHING**

ANSWERS

A) _____

B) _____

C) _____ minutes

- A) The mean of a set of numbers is 20. If one of the numbers is increased by 300, the mean increases to 35. How many numbers are in the set?

B) Solve for k .
$$\frac{k^2 + 9}{k^2 - 3k + 2} - \frac{6}{k - 1} = \frac{2k}{k - 2}$$

- C) Each family member can clean the family room alone in the times specified below:

Mother – 12 minutes
Father – 27 minutes
Son – $2x$ minutes
Daughter – $3x$ minutes

The family room can be cleaned by this foursome, if they work together for 6 minutes.
How long would it take the daughter to clean the family room by herself?
Assume that they each work at the individual rates implied by the above time table and since they work so well together as a family that no time is lost as they coordinate their efforts.