

**MASSACHUSETTS MATHEMATICS LEAGUE**  
**FEBRUARY 2005**  
**ROUND 4 ALGEBRA ONE: WORD PROBLEMS**

**ANSWERS**

A) \_\_\_\_\_ gallons

B) \_\_\_\_\_

C) \_\_\_\_\_ hour

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- A) How many gallons of pure water must be added to a gallon of alcohol 75% pure to make a mixture only 15% pure?
- B) I am half as old as my mother was when my brother was twelve years younger than I am now. My brother was born when my mother was 26. If the sum of my brother's and my own current ages is 36, how old was my mother when I was born?
- C) I paddled my canoe upstream for 6 hours. I then rested for an hour as my canoe drifted downstream, then paddled back downstream to my starting point in just 2 hours. How much earlier would I have gotten back if I had headed back immediately rather than resting for that hour? Express your answer as a reduced fraction of an hour.