

MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 5 - FEBRUARY 2017
ROUND 4 ALG 1: WORD PROBLEMS

ANSWERS

A) _____

B) _____

C) _____

A) A tub contains 50 liters of a 5% salt solution. Exactly how many liters of water must be added to change the solution to a 3% solution?

B) I drove a distance of 200 miles at 52 mph.
The next day I drove over the same route at 48 mph.
My average speed for the entire 2-day trip was slightly less than 50 mph.
Compute how much less (in mph).

C) Points A and B are located on the surface of a DVD.
It is known that point A is 3" from the center of the disk.
The DVD is turning at 1024 RPM (revolutions per minute).
In the same timeframe, point B travels 62.5% as far as point A .
In terms of π , point B travels $k\pi$ inches in $\frac{1}{10,000}$ of a second.
Express k as a simplified rational fraction of the form $\frac{N}{D}$.