MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2016
ROUND 2 ALG1: EXPONENTS AND RADICALS

ANSWERS

A) _____

B) _____

C) S = { _____ }

A) Determine all integers for which $x = \left(\frac{x-1}{x+3}\right)^{-1}$.

B) Solve for x. $\sqrt{4x-2} - \sqrt{2x} = 1$

C) Let S be the set of all values of $x \geq 5$ for which the fraction $F = \frac{(x-8)(x^2-8x+12)+(x-6)(x^2-10x+16)}{x-\sqrt{20x-96}}$ would be zero, undefined, or indeterminant.
Determine all real numbers that belong to set S.

Recall: $\frac{0}{N}$, for $N \neq 0$, is zero.

$\frac{0}{0}$ is indeterminate, while $\frac{N}{0}$, for $N \neq 0$, is undefined.