

**MASSACHUSETTS MATHEMATICS LEAGUE  
CONTEST 1 - OCTOBER 2007  
ROUND 4 ALG 1: FRACTIONS & MIXED NUMBERS**

**ANSWERS**

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

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

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

<b>***** NO CALCULATORS ON THIS ROUND *****</b>
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A) Compute: 
$$\frac{2\frac{7}{16} - 3\frac{3}{4}}{5\frac{5}{8} + 7\frac{1}{2}}$$

B) Solve for  $x$ . 
$$\frac{x-3}{x+1} - \frac{2x-8}{x^2-1} = \frac{3}{x-1}$$

C) If the integer  $n \geq 1$  and  $\frac{(n+1)!(2n-2)!}{(n-1)!(2n)!} = \frac{2}{7}$ , compute  $n$ .

Recall:  $n! = n(n-1)(n-2) \dots \cdot 2 \cdot 1$  and  $0! = 1$