

**MASSACHUSETTS MATHEMATICS LEAGUE**  
**CONTEST 4 - JANUARY 2015**  
**ROUND 2 ALG 1: FACTORING AND/OR EQUATIONS INVOLVING FACTORING**

**ANSWERS**

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

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

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

A) The trinomial  $24x^2 + 175x + 100$  factors as  $(Ax + B)(Cx + D)$ .  
Compute the product  $ABCD$ .

B) Compute all real roots of  $(x-3)^3 + 2(x-3)^2 = 8x - 24$ .

C) Compute all values of  $x$  for which  $\frac{x}{2x+3} - \frac{x+1}{3-2x} - \frac{20x}{8x^2-18} = 0$ .