

MASSACHUSETTS MATHEMATICS LEAGUE  
OCTOBER 2003  
ROUND 6: EVALUATIONS

ANSWERS

A) 2

B) 51

C) 16

A) If  $x + y = 7$  and  $x - y = 3$  what is the value of  $3^{2(5) - 3(2)}$ ?

$$\begin{array}{l} 2x + 3y + 4z + 5w = 8^2 \\ 2x + 2y + 2z + 2w = 4 \end{array} \quad x + y + z + w = 2$$

B) If  $x + y = 7$  and  $x - y = 3$  what is the value of  $3^{2(5) - 3(2)}$ ?

$$\begin{array}{l} x - y = 3 \\ 2x = 10 \\ x = 5 \\ 2y = 4 \\ y = 2 \end{array} \quad 3^{2(5) - 3(2)} = 3^{10 - 6} = 3^4 = 81$$

C) Find the value of  $(234567891)(234567891) - (234567895)(234567887)$

$$\begin{array}{l} (x)(x) - (x+4)(x-4) \\ x^2 - (x^2 - 16) \\ 16 \end{array}$$