

**MASSACHUSETTS MATHEMATICS LEAGUE
CONTEST 6 - MARCH 2010
ROUND 2 ALG1: EXPONENTS AND RADICALS**

ANSWERS

A) _____

B) _____

C) _____

***** NO CALCULATORS IN THIS ROUND *****

A) Given $\sqrt{2^4(5^{-2}-13^{-2})} = \frac{A}{B}$, a reduced fraction. Compute $A + B$.

Note: a^{-n} is equivalent to $\frac{1}{a^n}$

B) Compute $\left(\frac{2\sqrt{5}-\sqrt{10}}{\sqrt{10}-\sqrt{5}}\right)^2$

C) Given: $\sqrt{\frac{9}{16}-\frac{9}{25}} = \frac{3}{4}-\frac{3}{x}$ for some integer value of x .

Compute $\sqrt{\frac{2^x \cdot 4^{3x+4}}{8^{2x+2}}}$.